MINOR SOURCE OPERATING PERMIT
OFFICE OF AIR QUALITY

Elkhart Brass Manufacturing Co., Inc.
1302 W. Beardsley Avenue
Elkhart, Indiana 46515

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 039-7635-00072	
Original signed by Paul Dubenetzky Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: May 1, 2001 Expiration Date: May 1, 2006

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in Conditions A.1 and A.2 are descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary brass and aluminum fire fighting equipment manufacturing source.

Authorized Individual:	Art Zielinski
Source Address:	1302 W. Beardsley Avenue, Elkhart, Indiana 46515
Mailing Address:	P.O. Box 1127, Elkhart, Indiana 46515
SIC Code:	3341
County Location:	Elkhart
County Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Minor Source, under PSD Rules; Minor Source, Section 112 of the Clean Air Act 1 of 28 Listed Source Categories

A.2 Emissions Units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

(a) Grinding and finishing operations with a capacity of 1.75 tons of castings per hour consisting of:

(1) One (1) grinder, known as EU1, equipped with a baghouse for PM control, installed in 1987, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(2) One (1) belt grinder, known as EU2, equipped with a baghouse for PM control, installed in 1985, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(3) One (1) tumblast, known as EU3, equipped with a baghouse for PM control, installed in 1979, exhausted to stack 1, approximate capacity: 1.17 tons per hour.

(4) One (1) cut off saw, known as EU4, equipped with a baghouse for PM control, installed in 1993, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(5) One (1) belt sander, known as EU5, equipped with a cyclone and a baghouse for PM control, installed in 1989, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(6) One (1) grinder, known as EU6, equipped with a baghouse for PM control, installed in 1987, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(7) One (1) grinder, known as EU7, equipped with a baghouse for PM control, installed

in 1985, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(8) One (1) belt sander, known as EU8, equipped with a baghouse for PM control, installed in 1990, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(9) One (1) polisher, known as EU11, installed in 1992, equipped with a cyclone and a baghouse for PM control, exhausted to stack 5, approximate capacity: 0.125 tons per hour.

(10) One (1) buffer, known as EU12, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 5, approximate capacity: 0.125 tons per hour.

(11) One (1) surface grinder, known as EU14, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(12) One (1) wire wheel, known as EU15, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(13) One (1) buffer, known as EU16, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.269 tons per hour.

(14) One (1) buffer, known EU17, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(15) One (1) polisher, known as EU18, installed in 1992, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(16) One (1) surface grinder, known as EU21, installed in 1978, equipped with a cyclone for PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.

(17) Two (2) tool grinders, known as EU22 and EU23, EU22 installed in 1973 & EU23 installed in 1972, each equipped with a cyclone for PM control, each exhausted to stack 9, approximate capacity: 0.269 tons per hour, each.

(18) One (1) universal grinder, known as EU24, installed in 1973, equipped with a cyclone for PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.

(19) One (1) tumblast, known as EU27, installed in 1990, exhausted to stack 1, equipped with a baghouse for PM control, approximate capacity: 1.17 tons per hour.

(b) Sand handling operations with a maximum capacity of 20 tons of sand per hour, consisting of the following:

(1) One (1) sand mullor and sand screen, known as EU19, installed in 1982, each equipped with a baghouse for PM control and exhausted to stack 7.

(2) One (1) bucket elevator system for sand, known as EU38, installed in 1995, exhausted to stack 18.

(c) Core making operations with a maximum capacity of 0.34 tons of shell cores per hour and 0.25 tons of phenolic cured ester cores per hour, consisting of the following:

Two (2) core machines, known as EU20 and EU101, installed in 1988, exhausted to stack 8.

(d) One (1) paint booth, known as EU26, installed in 1970, equipped with dry filters as overspray control, exhausted to stack 10, average capacity: 7.9 brass fittings per hour.

(e) Melting operations with a maximum capacity of 2.50 tons of brass or aluminum per hour, consisting of the following:

(1) Three (3) induction melt furnaces known as EU29, EU30 and EU31, with EU29 and EU30 installed in 1985 and exhausting to a fume duct (known as EU34) and stack 14, and EU31 installed in 1987 and exhausting to a fume duct (known as EU35), with all emissions which are not exhausting to the fume ducts exhausted to stack 13, capacity: 2.25 tons per hour, each.

(2) Two (2) natural gas heated swing arm crucible furnaces, known as EU32 and EU33, each installed in 1988 and exhausting to a fume duct (known as EU36), with all emissions which are not exhausting to the fume duct exhausted to stack 13, capacity: 2.25 tons per hour, each.

(f) Pouring, cooling and shakeout operations, with a maximum capacity of 2.50 tons per hour, consisting of the following:

(1) One (1) Sinto casting line, known as EU37, installed in 1999, consisting of mold making, pouring, cooling, and shakeout operations, exhausting to stacks S20 and S17.

(2) One (1) Rollover casting line, consisting of mold making, pouring, cooling, and shakeout operations.

(g) One (1) internal combustion engine, known as Process 011 and EU104, installed in 1990, using natural gas as fuel, exhausted to stack 84, capacity: 3.26 million British thermal units per hour.

(h) Forty-eight (48) natural gas-fired unit heaters, total capacity: 8.93 million British thermal units per hour.

(i) One (1) lead forging bench area, known as EU39, installed in 1977, exhausted to stack 19, capacity: 10 hammer heads per month.

(j) One (1) arc welder, known as EU40, installed in 1969, exhausted to stack 20, capacity: 6 inches per minute.

(k) One (1) acetylene welder, known as EU41, installed in 1969, exhausted to stack 20, capacity: 2 inches per minute.

(l) One (1) acetylene torch/braze/operation, known as EU45, installed in 1969, exhausted to stack 24, capacity: 5 pieces per hour.

(m) The following woodworking operations, with an average capacity of 0.19 pound per hour:

(1) One (1) drill press

(2) One (1) band saw

(3) One (1) wood lathe

(4) One (1) wood planer

(5) One (1) disc sander for wood

(6) One (1) reciprocating sander for wood

(7) One (1) table saw for wood

(n) The following wet metalworking and machining operations:

(1) Seven (7) CNC vertical mills

(2) One (1) CNC horizontal mill

(3) Ten (10) CNC lathes

(4) Five (5) manual vertical mills

(5) Two (2) manual horizontal mills

(6) Five (5) manual lathes

(7) One (1) cold cutoff saw

(8) One (1) abrasive cutoff saw

(9) One (1) surface grinder

(10) Three (3) grinders

(11) One (1) carbide grinder

(12) Ten (10) bench grinders

(13) Fifty (50) hand grinders

(14) Thirty-two (32) drill presses

(15) Four (4) band saws

(16) Thirteen (13) belt sanders

(17) Three (3) punch presses

(18) One (1) radial arm drill

(19) Five (5) multi-station chuckers

(20) One (1) shaper machine

(o) One (1) enclosed cabinet sandblast used for maintenance

(p) Five (5) lift trucks and one (1) skid loader operating on liquid propane gas.

(q) One (1) pipe threader used to apply threads to metal pieces, using a liquid lubricant.

(r) One (1) assembly cold cleaning degreasing unit, known as EU42, installed in 1979, exhausted to stack 21, capacity: 80 gallons, degreasing 1 wire basket per hour and using 165 gallons of solvent per year.

(s) Four (4) small parts washers, installed in October 1988, containing remote solvent reservoirs, using 570 gallons of degreasing agent and recovering 521 gallons of degreasing agent per year.

SECTION B GENERAL CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

This permit to operate does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Modification to Permit [326 IAC 2]

All requirements and conditions of this operating permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of operating permits pursuant to 326 IAC 2 (Permit Review Rules).

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

C.1 PSD and Part 70 Minor Source Status [326 IAC 2-2] [40 CFR 52.21] [326 IAC 2-7]

(a) The potential to emit of PM is limited to less than one hundred (100) tons per year. Therefore, the total source potential to emit of each criteria pollutant is less than one hundred (100) tons per year and the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.

(b) Any change or modification which may increase potential to emit PM_{10}, SO_2, VOC, NO_X or CO to 100 tons per year from this source, shall cause this source to be considered a major source under 326 IAC 2-7, and shall require approval from IDEM, OAQ prior to making the change.

(c) Any change or modification which may increase potential to emit of any criteria pollutant to one hundred (100) tons per year from this source, shall cause this source to be considered a major source under PSD, 326 IAC 2-2 and 40 CFR 52.21, and shall require approval from IDEM, OAQ prior to making the change.

C.2 Hazardous Air Pollutants (HAPs) [326 IAC 2-7]

Any change or modification which may increase potential to emit to ten (10) tons per year of any single hazardous air pollutant, twenty-five (25) tons per year of any combination of hazardous air pollutants from this source, shall cause this source to be considered a major source under Part 70 Permit Program, 326 IAC 2-7, and shall require approval from IDEM, OAQ prior to making the change.

C.3 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after issuance of this permit, including the following information on each emissions unit:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

(b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) PMP's shall be submitted to IDEM, OAQ, upon request and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.4 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

(a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1.

(c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

C.5 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

C.6 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to 326 IAC 2-6.1-6(d)(3):

(a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.

(b) The written notification shall be sufficient to transfer the permit to the new owner by a notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).

(c) IDEM, OAQ, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.7 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to operate may be revoked for any of the following causes:

(a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.8 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

C.9 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.10 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3 and by using ambient air quality modeling pursuant to 326 IAC 1-7-4.

Testing Requirements

C.11 Performance Testing [326 IAC 3-6] [326 IAC 2-1.1-11]

(a) Compliance testing on new emissions units shall be conducted within sixty (60) days after achieving maximum production rate, but no later than one hundred eighty (180) days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks

prior to the test date.

(b) All test reports must be received by IDEM, OAQ, within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Compliance Monitoring Requirements

C.12 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.13 Monitoring Methods [326 IAC 3]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

C.14 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 1-6]

(a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:

(1) This condition;

(2) The Compliance Determination Requirements in Section D of this permit;

(3) The Compliance Monitoring Requirements in Section D of this permit;

(4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and

(5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of:

(A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and

(B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.

(b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to

perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.

(c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:

(1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.

(2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied; or

(3) An automatic measurement was taken when the process was not operating; or

(4) The process has already returned to operating within "normal" parameters and no response steps are required.

(d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected emissions unit while the corrective actions are being implemented. IDEM, OAQ shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAQ within thirty (30) days of receipt of the notice of deficiency. IDEM, OAQ reserves the authority to use enforcement activities to resolve noncompliant stack tests.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected emissions unit.

The documents submitted pursuant to this condition do not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Record Keeping and Reporting Requirements

C.16 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control

equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a) (1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.17 Annual Emission Statement [326 IAC 2-6]

(a) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:

(1) Indicate actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);

(2) Indicate actual emissions of other regulated pollutants from the source, for purposes of Part 70 fee assessment.

(b) The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30. The annual emission statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(c) The annual emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

The submittal by the Permittee does require the certification by the “authorized individual” as defined by 326 IAC 2-1.1-1.

C.18 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) With the exception of performance tests conducted in accordance with Section C- Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.

(b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.

(c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.

(d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.

(e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

(f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.19 General Record Keeping Requirements [326 IAC 2-6.1-2]

(a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Records of required monitoring information shall include, where applicable:

(1) The date, place, and time of sampling or measurements;

(2) The dates analyses were performed;

(3) The company or entity performing the analyses;

(4) The analytic techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions existing at the time of sampling or measurement.

(c) Support information shall include, where applicable:

(1) Copies of all reports required by this permit;

(2) All original strip chart recordings for continuous monitoring instrumentation;

(3) All calibration and maintenance records;

(4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to

any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.

(d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.20 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) The reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(d) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:

(1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or

(2) A malfunction as described in 326 IAC 1-6-2; or

(3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.

(4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

(e) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.

(f) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

C.21 Annual Notification [326 IAC 2-6.1-5(a)(5)]

(a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.

(b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.

(c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Compliance Data Section, Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

(d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) Grinding and finishing operations with a capacity of 1.75 tons of castings per hour consisting of:

(1) One (1) grinder, known as EU1, equipped with a baghouse for PM control, installed in 1987, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(2) One (1) belt grinder, known as EU2, equipped with a baghouse for PM control, installed in 1985, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(3) One (1) tumblast, known as EU3, equipped with a baghouse for PM control, installed in 1979, exhausted to stack 1, approximate capacity: 1.17 tons per hour.

(4) One (1) cut off saw, known as EU4, equipped with a baghouse for PM control, installed in 1993, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(5) One (1) belt sander, known as EU5, equipped with a cyclone and a baghouse for PM control, installed in 1989, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(6) One (1) grinder, known as EU6, equipped with a baghouse for PM control, installed in 1987, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(7) One (1) grinder, known as EU7, equipped with a baghouse for PM control, installed in 1985, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(8) One (1) belt sander, known as EU8, equipped with a baghouse for PM control, installed in 1990, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(9) One (1) polisher, known as EU11, installed in 1992, equipped with a cyclone and a baghouse for PM control, exhausted to stack 5, approximate capacity: 0.125 tons per hour.

(10) One (1) buffer, known as EU12, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 5, approximate capacity: 0.125 tons per hour.

(11) One (1) surface grinder, known as EU14, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(12) One (1) wire wheel, known as EU15, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emissions Unit Description: (continued)

(13) One (1) buffer, known as EU16, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.269 tons per hour.

(14) One (1) buffer, known EU17, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(15) One (1) polisher, known as EU18, installed in 1992, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(16) One (1) surface grinder, known as EU21, installed in 1978, equipped with a cyclone for PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.

(17) Two (2) tool grinders, known as EU22 and EU23, EU22 installed in 1973 & EU23 installed in 1972, each equipped with a cyclone for PM control, each exhausted to stack 9, approximate capacity: 0.269 tons per hour, each.

(18) One (1) universal grinder, known as EU24, installed in 1973, equipped with a cyclone for PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.

(19) One (1) tumblast, known as EU27, installed in 1990, exhausted to stack 1, equipped with a baghouse for PM control, approximate capacity: 1.17 tons per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.1.1 Particulate Matter (PM) [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2, the PM from the one (1) grinder, known as EU1, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(b) Pursuant to 326 IAC 6-3-2, the PM from the one (1) belt grinder, known as EU2, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(c) Pursuant to 326 IAC 6-3-2, the PM from the one (1) tumblast, known as EU3, shall not exceed 4.55 pounds per hour when operating at a process weight rate of 1.17 tons per hour.

(d) Pursuant to 326 IAC 6-3-2, the PM from the one (1) cut off saw, known as EU4, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(e) Pursuant to 326 IAC 6-3-2, the PM from the one (1) belt sander, known as EU5, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(f) Pursuant to 326 IAC 6-3-2, the PM from the one (1) grinder, known as EU6, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(g) Pursuant to 326 IAC 6-3-2, the PM from the one (1) grinder, known as EU7, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(h) Pursuant to 326 IAC 6-3-2, the PM from the one (1) belt sander, known as EU8, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(i) Pursuant to 326 IAC 6-3-2, the PM from the one (1) polisher, known as EU11, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

(j) Pursuant to 326 IAC 6-3-2, the PM from the one (1) buffer, known as EU12, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

(k) Pursuant to 326 IAC 6-3-2, the PM from the one (1) surface grinder, known as EU14, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

(l) Pursuant to 326 IAC 6-3-2, the PM from the one (1) wire wheel, known as EU15, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

(m) Pursuant to 326 IAC 6-3-2, the PM from the one (1) buffer, known as EU16, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(n) Pursuant to 326 IAC 6-3-2, the PM from the one (1) buffer, known as EU17, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

(o) Pursuant to 326 IAC 6-3-2, the PM from the one (1) polisher, known as EU18, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

(p) Pursuant to 326 IAC 6-3-2, the PM from the one (1) surface grinder, known as EU21, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(q) Pursuant to 326 IAC 6-3-2, the PM from each of the two (2) tool grinders, known as EU22 and EU23, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour, each.

(r) Pursuant to 326 IAC 6-3-2, the PM from the one (1) universal grinder, known as EU24, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(s) Pursuant to 326 IAC 6-3-2, the PM from the one (1) tumblast, known as EU27, shall not exceed 4.55 pounds per hour when operating at a process weight rate of 1.17 tons per hour.

These limitations were based on the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.1.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

The potential to emit PM after controls from the grinding and finishing operations in this section shall be limited to less than 3.94 pounds of PM per ton of metal throughput. This emission rate is achieved by maintaining an average overall capture and control efficiency of no less than seventy-seven percent (77%) at all equipment controlling the grinding and finishing operations, and result in a potential to emit of no more than 6.90 pounds per hour and 30.2 tons per year of PM from the total of all grinding and cleaning operations. Thus, the total potential to emit of the entire source is less than 100 tons per

year, and 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable.

D.1.3 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for these emissions units and any control devices.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.1.4 Particulate Matter (PM)

(a) The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the grinder, known as EU1, is in operation.

(b) The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the belt grinder, known as EU2, is in operation.

(c) The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the tumblast, known as EU3, is in operation.

(d) The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the cut off saw, known as EU4, is in operation.

(e) The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the belt sander, known as EU5, is in operation.

(f) The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the grinder, known as EU6, is in operation.

(g) The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the grinder, known as EU7, is in operation.

(h) The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the belt sander, known as EU8, is in operation.

(i) The cyclone and baghouse, exhausting to stack 5, for PM control shall be in operation at all times when the one (1) polisher, known as EU11, is in operation.

(j) The cyclone and baghouse, exhausting to stack 5, for PM control shall be in operation at all times when the one (1) buffer, known as EU12, is in operation.

(k) The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the one (1) surface grinder, known as EU14, is in operation.

(l) The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the one (1) wire wheel, known as EU15, is in operation.

(m) The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the one (1) buffer, known as EU16, is in operation.

(n) The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the one (1) buffer, known as EU17, is in operation.

(o) The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all

times when the one (1) polisher, known as EU18, is in operation.

(p) The cyclone, exhausting to stack 9, for PM control shall be in operation at all times when the one (1) surface grinder, known as EU21, is in operation.

(q) The cyclone, exhausting to stack 9, for PM control shall be in operation at all times when the two (2) tool grinders, known as EU22 and EU23, are in operation.

(r) The cyclone, exhausting to stack 9, for PM control shall be in operation at all times when the one (1) universal grinder, known as EU24, is in operation.

(s) The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the one (1) tumblast, known as EU27, is in operation.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.5 Visible Emissions Notations

(a) Visible emission notations of the grinding and finishing stacks exhausts shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

D.1.6 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouses used in conjunction with the grinding and finishing, at least once per shift when the equipment exhausting to that baghouse is in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses controlling the grinding and finishing equipment (EU1 through EU12 and EU14 through EU18) shall be maintained within the range of 1.0 and 3.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.1.7 Baghouse Inspections

An inspection shall be performed each calender quarter of all bags controlling the grinding and finishing when venting to the atmosphere. A baghouse inspection shall be performed within three months of

redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors. All defective bags shall be replaced.

D.1.8 Broken or Failed Bag Detection

In the event that bag failure has been observed:

(a) The affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

D.1.9 Cyclone Inspections

An inspection shall be performed each calender quarter of all cyclones controlling the grinding and finishing when venting to the atmosphere. A cyclone inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors.

D.1.10 Cyclone Failure Detection

In the event that bag failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Record Keeping and Reporting Requirement [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.11 Record Keeping Requirements

(a) To document compliance with Condition D.1.5, the Permittee shall maintain records of visible emission notations of the grinding and finishing stacks exhausts once per shift.

(b) To document compliance with Condition D.1.6, the Permittee shall maintain the following:

(1) Once per shift records of the following operational parameters of the baghouses during normal operation when venting to the atmosphere:

(A) Inlet and outlet differential static pressure; and

(B) Cleaning cycle operation.

(2) Documentation of the dates vents are redirected.

(c) To document compliance with Conditions D.1.7 and D.1.9, the Permittee shall maintain records of the results of the inspections required under Conditions D.1.7 and D.1.9 and the dates the vents are redirected.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(b) Sand handling operations with a maximum capacity of 20 tons of sand per hour, consisting of the following:

(1) One (1) sand mullor and sand screen, known as EU19, installed in 1982, each equipped with a baghouse for PM control and exhausted to stack 7.

(2) One (1) bucket elevator system for sand, known as EU38, installed in 1995, exhausted to stack 18.

(c) Core making operations with a maximum capacity of 0.34 tons of shell cores per hour and 0.25 tons of phenolic cured ester cores per hour, consisting of the following:

Two (2) core machines, known as EU20 and EU101, installed in 1988, exhausted to stack 8.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.2.1 Particulate Matter Limitations (PM) [326 IAC 6-3-2] [326 IAC 2-2]

(a) Pursuant to 326 IAC 6-3-2, the PM from the sand handling operations, known as EU19 and EU38, shall not exceed 30.5 pounds per hour when operating at a process weight rate of 20 tons per hour.

(b) Pursuant to 326 IAC 6-3-2, the PM from the two (2) core machines, known as EU20 and EU101, shall not exceed 2.88 pounds per hour, total, when operating at a process weight rate of 0.59 tons per hour, total.

The pounds per hour limitations were calculated with the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

(c) Any change or modification that increases the potential to emit PM at the sand handling operations, known as EU19, to greater than 1.08 pounds per hour and/or increases the potential to emit at the total of the two (2) core machines, known as EU20 and EU101, to greater than 1.60 pounds per hour may cause the source to become subject to the requirements of 326 IAC 2-2, Prevention of Significant Deterioration, and prior approval shall be required. These limitations are equal to the potential to emit of each facility.

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(d) One (1) paint booth, known as EU26, installed in 1970, equipped with dry filters as overspray control, exhausted to stack 10, average capacity: 7.9 brass fittings per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.3.1 Volatile Organic Compounds (VOCs) [326 IAC 8-2-9]

The VOC input to the applicators at the one (1) paint booth, known as EU26, minus the VOC recovered, shall be limited to less than 15 pounds per day. Therefore, the requirements of 326 IAC 8-2-9 are not applicable.

D.3.2 Particulate Matter (PM) [326 IAC 6-3-2(c)]

The PM from the one (1) paint booth, known as EU26, shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and P = process weight rate in tons per hour

D.3.3 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for this emissions unit and its control device.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.3.4 Volatile Organic Compounds (VOC)

Compliance with the VOC usage limitation contained in Condition D.3.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the coating manufacturer. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.3.5 VOC Emissions

Compliance with Condition D.3.1 shall be demonstrated within 30 days of the end of each day based on the total volatile organic compound usage the day.

D.3.6 Particulate Matter (PM)

The dry filters for PM control shall be in operation at all times when the one (1) paint booth is in operation.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.3.7 Monitoring

(a) Daily inspections shall be performed to verify the placement, integrity and particle loading of

the filters during each day when the paint booth, EU26, is operated. To monitor the performance of the dry filters, weekly observations shall be made of the overspray from the surface coating booth stack (stack 10) while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

(b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

(c) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.3.8 Record Keeping Requirements

(a) To document compliance with Condition D.3.1, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken daily and shall be complete and sufficient to establish compliance with the VOC usage limits and the VOC emission limits established in Condition D.3.1.

(1) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;

(2) A log of the dates of use;

(3) The cleanup solvent usage for each day;

(4) The total VOC usage for each day; and

(5) The weight of VOCs emitted for each compliance period.

(b) To document compliance with Condition D.3.6 and D.3.7, the Permittee shall maintain a log of weekly overspray observations, daily and monthly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.

(c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.9 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.3.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the

end of the quarter being reported.

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(e) Melting operations with a maximum capacity of 2.50 tons of brass or aluminum per hour, consisting of the following:

(1) Three (3) induction melt furnaces known as EU29, EU30 and EU31, with EU29 and EU30 installed in 1985 and exhausting to a fume duct (known as EU34) and stack 14, and EU31 installed in 1987 and exhausting to a fume duct (known as EU35), with all emissions which are not exhausting to the fume ducts exhausted to stack 13, capacity: 2.25 tons per hour, each.

(2) Two (2) natural gas heated swing arm crucible furnaces, known as EU32 and EU33, each installed in 1988 and exhausting to a fume duct (known as EU36), with all emissions which are not exhausting to the fume duct exhausted to stack 13, capacity: 2.25 tons per hour, each.

(f) Pouring, cooling and shakeout operations, with a maximum capacity of 2.50 tons per hour, consisting of the following:

(1) One (1) Sinto casting line, known as EU37, installed in 1999, consisting of mold making, pouring, cooling, and shakeout operations, exhausting to stacks S20 and S17.

(2) One (1) Rollover casting line, consisting of mold making, pouring, cooling, and shakeout operations.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.4.1 Particulate Matter Limitations (PM) [326 IAC 6-2-3] [326 IAC 2-2]

(a) Pursuant to 326 IAC 6-3-2, the PM from the melt furnaces, known as EU29, EU30, EU31, EU32 and EU33, shall not exceed 7.58 pounds per hour when operating at a process weight rate of 2.5 tons per hour.

(b) Pursuant to 326 IAC 6-3-2, the PM from the pouring, cooling and shakeout operations shall not exceed 7.58 pounds per hour when operating at a process weight rate of 2.5 tons per hour.

These limitations are based on the following equations:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

(c) Pursuant to Significant Source Modification 039-10941-00072, issued on July 8, 1999, any change or modification which results in an increase in PM emissions to 100 tons per year or more from the Sinto Line will cause that modification to be a major modification to an existing

minor source pursuant to 326 IAC 2-2, Prevention of Significant Deterioration, and prior approval is required.

(d) Any change or modification that increases the potential to emit PM at the melting operations to greater than 7.29 pounds per hour and/or increases the potential to emit at the total of the pouring, cooling and shakeout operations to greater than 5.78 pounds per hour may cause the source to become subject to the requirements of 326 IAC 2-2, Prevention of Significant Deterioration, and prior approval shall be required. These limitations are equal to the potential to emit of each facility.

D.4.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for these emissions units.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.4.3 Visible Emissions Notations

(a) Visible emission notations of the melting and pouring, cooling and shakeout stacks (stack 13**,** S17 and S20) exhausts shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

Record Keeping and Reporting Requirement [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.4.4 Record Keeping Requirements

(a) To document compliance with Condition D.4.3, the Permittee shall maintain records of visible emission notations of the melting and pouring, cooling and shakeout stacks exhausts once per shift.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(g) One (1) internal combustion engine, known as Process 011 and EU104, installed in 1990, using natural gas as fuel, exhausted to stack 84, capacity: 3.26 million British thermal units per hour.

(h) Forty-eight (48) natural gas-fired unit heaters, total capacity: 8.93 million British thermal units per hour.

(i) One (1) lead forging bench area, known as EU39, installed in 1977, exhausted to stack 19, capacity: 10 hammer heads per month.

(j) One (1) arc welder, known as EU40, installed in 1969, exhausted to stack 20, capacity: 6 inches per minute.

(k) One (1) acetylene welder, known as EU41, installed in 1969, exhausted to stack 20, capacity: 2 inches per minute.

(l) One (1) acetylene torch/braze/operation, known as EU45, installed in 1969, exhausted to stack 24, capacity: 5 pieces per hour.

(m) The following woodworking operations, with an average capacity of 0.19 pound per hour:

(1) One (1) drill press

(2) One (1) band saw

(3) One (1) wood lathe

(4) One (1) wood planer

(5) One (1) disc sander for wood

(6) One (1) reciprocating sander for wood

(7) One (1) table saw for wood

(n) The following wet metalworking and machining operations:

(1) Seven (7) CNC vertical mills

(2) One (1) CNC horizontal mill

(3) Ten (10) CNC lathes

(4) Five (5) manual vertical mills

(5) Two (2) manual horizontal mills

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emissions Unit Description: (continued)

(6) Five (5) manual lathes

(7) One (1) cold cutoff saw

(8) One (1) abrasive cutoff saw

(9) One (1) surface grinder

(10) Three (3) grinders

(11) One (1) carbide grinder

(12) Ten (10) bench grinders

(13) Fifty (50) hand grinders

(14) Thirty-two (32) drill presses

(15) Four (4) band saws

(16) Thirteen (13) belt sanders

(17) Three (3) punch presses

(18) One (1) radial arm drill

(19) Five (5) multi-station chuckers

(20) One (1) shaper machine

(o) One (1) enclosed cabinet sandblast used for maintenance

(p) Five (5) lift trucks and one (1) skid loader operating on liquid propane gas.

(q) One (1) pipe threader used to apply threads to metal pieces, using a liquid lubricant.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.5.1 Particulate Matter Limitation (PM) [326 IAC 6-2-3]

The particulate matter (PM) from the lead forging bench, arc welder, acetylene welder, acetylene torch/braze operation, woodworking operations, and cabinet sandblast shall each not exceed 0.551 pounds per hour when operating at a process weight rate of less than 100 pounds per hour.

SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(r) One (1) assembly cold cleaning degreasing unit, known as EU42, installed in 1979, exhausted to stack 21, capacity: 80 gallons, degreasing 1 wire basket per hour and using 165 gallons of solvent per year.

(s) Four (4) small parts washers, installed in October 1988, containing remote solvent reservoirs, using 570 gallons of degreasing agent and recovering 521 gallons of degreasing agent per year.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.6.1 Volatile Organic Compounds (VOC) [326 IAC 8-3-5]

(a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), the owner or operator of the one (1) assembly cold cleaning degreasing unit, existing as of July 1, 1990 in Elkhart County and not having a remote solvent reservoir, shall ensure that the following control equipment requirements are met:

(1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:

(A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF));

(B) The solvent is agitated; or

(C) The solvent is heated.

(2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

(3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).

(4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.

(5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees

Celsius (38EC) (one hundred degrees Fahrenheit (100EF)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9EC) (one hundred twenty degrees Fahrenheit (120EF)):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

(B) A water cover when the solvent used is insoluble in, and heavier than, water.

(C) Other systems of demonstrated equivalent control such as a refrigerated chiller of carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.

(b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of the one (1) assembly cold cleaning degreasing unit shall ensure that the following operating requirements are met:

(1) Close the cover whenever articles are not being handled in the degreaser.

(2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.

(3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

Indiana Department of Environmental Management
Office of Air Quality
Compliance Data Section

Monthly Report
(submitted quarterly)

Company Name: Elkhart Brass Manufacturing Company, Inc.
Location: 1302 W. Beardsley Avenue, Elkhart, Indiana 46515
Permit No.: MSOP 039-7635-00072
Source/Facility: One (1) paint booth, known as EU26
Parameter: VOC Usage
Limit: Less than 15 pounds per day

Month: _____ **Year:** _____

Day	VOC Usage this day (lbs/day)	Day	VOC Usage this day (lbs/day)
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16			

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Air Quality
FAX NUMBER - 317 233-5967

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES ?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100 TONS/YEARCARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. :_____
LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: ____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 20_____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION:

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 20____ AM / PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER:

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION:

MEASURES TAKEN TO MINIMIZE EMISSIONS:

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES:
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS:
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT:
INTERIM CONTROL MEASURES: (IF APPLICABLE)

MALFUNCTION REPORTED BY: _____ TITLE:
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME:

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

*** Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

PAGE 2 OF 2

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Air Quality
COMPLIANCE DATA SECTION

MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	**Elkhart Brass Manufacturing Company, Inc.**
Address:	**1302 W. Beardsley Avenue**
City:	**Elkhart**
Phone #:	**(219) 295-8330**
MSOP #:	**039-7635-00072**

I hereby certify that Elkhart Brass Manufacturing Company, Inc. is

9 still in operation.

9 no longer in operation.

I hereby certify that Elkhart Brass Manufacturing Company, Inc is

9 in compliance with the requirements of MSOP **039-7635-00072**.

9 not in compliance with the requirements of MSOP **039-7635-00072**.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the
Technical Support Document for Operation

Source Name:	**Elkhart Brass Manufacturing Company, Inc.**
Source Location:	**1302 W. Beardsley Avenue, Elkhart, Indiana 46515**
County:	**Elkhart**
Construction Permit No.:	**MSOP 039-7635-00062**
SIC Code:	**3341**
Permit Reviewer:	**CarrieAnn Ortolani/ MES**

On February 18, 2001, the Office of Air Quality (OAQ) had a notice published in the Elkhart Truth, Elkhart, Indiana, stating that Elkhart Brass Manufacturing Company, Inc. had applied for a minor source operating permit to operate a brass and aluminum fire fighting equipment manufacturing source with baghouses and cyclones as controls. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On March 21, 2001, Martin J. Stromberger of RMT, Inc., on behalf of Elkhart Brass Manufacturing Company, Inc., submitted comments on the proposed construction permit. The summary of the comments and corresponding responses are as follows (The permit language, if changed, has deleted language as ~~strikeouts~~ and new language **bolded.**):

Comment 1:

Section A.2 Emission Units
Several of the emission units and emission control devices have been changed since the original application or can be more accurately described than presented in the draft MSOP.

Response 1:

See Comment and Response 7.

Comment 2:

Section D.1.5(a)
This provision requires visible emission notations of the grinding and finishing stacks once per shift during normal daylight hours. The once per shift requirement is onerous and impractical for the nighttime shifts. We are requesting that visible emission notations be required once per day.

Response 2:

Visible emission notations of the grinding and finishing stacks exhausts are required once per shift during normal daylight operations when exhausting to the atmosphere. If there are no hours of daylight during an entire shift, the visible emission notation is not required for that shift.

In this case, the emission units and control devices must be operating properly in order for the facilities to comply with 326 IAC 6-3-2, Process Operations, and so that emissions do not increase such that the source requires a permit pursuant to 326 IAC 2-2, Prevention of Significant Deterioration. Specific

compliance monitoring requirements are included in this permit for the grinding and finishing operations because the grinding and finishing operations emit PM, have applicable PM requirements and a condition limiting the potential to emit PM is the only thing keeping the source out of an applicable requirement. Condition D.1.2 limits the potential to emit PM so that the requirements of 326 IAC 2-2 are not applicable to this source. Therefore, compliance monitoring is required to ensure continuous compliance with Conditions D.1.1 and D.1.2.

The suggested wording could allow more than twenty-four (24) hours of abnormal visible emissions. Therefore, daily visible emission notations would not serve to effectively prevent possible limitation exceedances. The OAQ believes that visible emissions notations once per operating shift are a reasonable requirement. Therefore, there are no changes to the permit in response to this comment.

Comment 3:

Section D.1.6
This provision requires static pressure drop readings across the grinding and finishing baghouses once per shift. This once per shift requirement is onerous and unnecessary because pressure drops do not vary so frequently as to require once per shift readings. We are requesting that the baghouse static pressure drop readings be required once per day.

Response 3:

See Response 2. This compliance monitoring condition is in the permit in order to ensure continuous compliance with 326 IAC 6-3-2, Process Operations, and so that emissions do not increase such that the source requires a permit pursuant to 326 IAC 2-2, Prevention of Significant Deterioration. The suggested wording would allow sporadic use of compliance monitoring, which would not accomplish the purpose of compliance monitoring. Baghouse failure can occur suddenly; therefore, monitoring of baghouse operational parameters should be performed more frequently than daily in such cases where a source operates more than one shift per day. Monitoring of the static pressure drop can alert the operator to relative changes (such as dust cake resistance) over a period of time. The operator can use this information to chart trends and determine if the unit is operating within the optimal range as determined by baseline testing of the unit and manufacturer=s specifications. Any deviations from the normal operational range of the unit, whether gradual or sudden, should alert the operator that the unit needs maintenance. Both gradual and sudden changes in the pressure drop could result in damage to the bags or baghouse if not properly addressed. The OAQ believes that parametric monitoring once per operating shift is a reasonable requirement. Therefore, there are no changes to the permit in response to this comment.

Comment 4:

Section D.3.7(a)
This provision requires daily inspections of the paint booth filters to verify placement, integrity, and particle loading. Insufficient coating is conducted in the booth to warrant daily inspection of the filters. The current inspection schedule for the filters is weekly, which is sufficient to verify the integrity of the filters. We are requesting that the inspection of the paint booth filters be required on a weekly basis.

Response 4:

Complying with the requirements of 326 IAC 6-3-2, Process Operations, can be especially variable for paint booths. The actual substrate being painted and the solids content of the paint being used can affect the process weight rate, the gallons or pounds of solids used, transfer efficiency, or other factors that directly affect actual, allowable, or potential emissions. While permit applications contain

representative information regarding these factors, relying on this information as an ongoing demonstration of compliance is difficult if the factors are not themselves enforceable. The OAQ does not believe that it would be generally advisable to include these factors as permit conditions, to make them enforceable or to presume that they are so fixed they define a source=s potential emissions because either could severely limit a source=s operational flexibility. Therefore, properly operating the air pollution controls that are already in place is generally adequate to demonstrate compliance with 326 IAC 6-3-2 in lieu of a stack test, and also assures compliance with applicable rules limiting fugitive dust, opacity, and potential to emit. The OAQ believes that checking the placement and integrity of the filters once a day is a very effective means of ensuring proper operation and ongoing compliance. However, inspections of the filters are not necessary during any day when the paint booth is not operated. Therefore, the following change has been made to Condition D.3.7(a):

(a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters **during each day when the paint booth, EU26, is operated**. To monitor the performance of the dry filters, weekly observations shall be made of the overspray from the surface coating booth stack (stack 10) while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

Comment 5:

Section D.4.2
This section requires that a Preventive Maintenance Plan be prepared for the melting furnaces and metal pouring and cooling lines. We do not believe a Preventive Maintenance Plan is warranted for these operations since no emission control devices are employed on these operations and Preventive Maintenance Plan requirements apply to emission control devices.

Response 5:

If lack of proper maintenance could cause or contribute to a violation of any limitation on emissions or potential to emit, then a Preventive Maintenance Plan will be required even if there is no control device. In this case, the IDEM, OAQ has determined that the facility in question requires a preventive maintenance plan. The melting, metal pouring, cooling and shakeout must operate properly to ensure compliance with 326 IAC 6-3-2, Process Operations, and so that emissions do not increase such that the source requires a permit pursuant to 326 IAC 2-2, Prevention of Significant Deterioration. Therefore, there are no changes to the permit in response to this comment.

Comment 6:

Section D.4.3(a)
This provision requires visible emission notations of the melting and pouring, cooling, and shakeout stacks once per shift during normal daylight hours. The once per shift requirement is onerous and impractical for nighttime shifts. We are requesting that the visible emission notations be required once per day.

Response 6:

See Response 2. In this case, the emission units must be operating properly in order for the facilities to comply with 326 IAC 6-3-2, Process Operations, and so that emissions do not increase such that the source requires a permit pursuant to 326 IAC 2-2, Prevention of Significant Deterioration. Specific

compliance monitoring requirements are included in this permit for the melting and pouring, cooling and shakeout operations because the melting and pouring, cooling and shakeout operations emit PM, have applicable PM requirements, and the actual PM emissions exceed twenty-five (25) tons per year. Therefore, compliance monitoring is required to ensure continuous compliance with Condition D.4.1. There are no changes to the permit in response to this comment.

On March 30, 2001, Martin J. Stromberger of RMT, Inc., on behalf of Elkhart Brass Manufacturing Company, Inc. submitted an additional comments on the proposed construction permit. The summary of the comments and corresponding responses are as follows (The permit language, if changed, has deleted language as ~~strikeouts~~ and new language **bolded.**):

Comment 7:

A corrected listing of the equipment and process flow diagram is provided. The equipment is as follows:

(a) Grinding and finishing operations with a capacity of 1.75 tons of castings per hour consisting of:

(1) One (1) grinder, known as EU1, equipped with a baghouse for PM control, installed in 1987, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(2) One (1) belt grinder, known as EU2, equipped with a baghouse for PM control, installed in 1985, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(3) One (1) tumblast, known as EU3, equipped with a baghouse for PM control, installed in 1979, exhausted to stack 1, approximate capacity: 1.17 tons per hour.

(4) One (1) cut off saw, known as EU4, equipped with a baghouse for PM control, installed in 1993, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(5) One (1) belt sander, known as EU5, equipped with a baghouse for PM control, installed in 1989, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(6) One (1) grinder, known as EU6, equipped with a baghouse for PM control, installed in 1987, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(7) One (1) grinder, known as EU7, equipped with a baghouse for PM control, installed in 1985, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(8) One (1) belt sander, known as EU8, equipped with a cyclone and a baghouse for PM control, installed in 1990, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(9) One (1) polisher, known as EU11, installed in 1992, equipped with a cyclone and a baghouse for PM control, exhausted to stack 5, approximate capacity: 0.125 tons per hour.

(10) One (1) buffer, known as EU12, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 5, approximate capacity: 0.125 tons per

hour.

(11) One (1) surface grinder, known as EU14, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(12) One (1) wire wheel, known as EU15, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(13) One (1) buffer, known as EU16, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.269 tons per hour.

(14) One (1) buffer, known EU17, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(15) One (1) polisher, known as EU18, installed in 1992, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(16) One (1) surface grinder, known as EU21, installed in 1978, equipped with a cyclone for PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.

(17) Two (2) tool grinders, known as EU22 and EU23, EU22 installed in 1973 & EU23 installed in 1972, each equipped with a cyclone for PM control, each exhausted to stack 9, approximate capacity: 0.269 tons per hour, each.

(18) One (1) universal grinder, known as EU24, installed in 1973, equipped with a cyclone for PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.

(22) One (1) tumblast, known as EU27, installed in 1990, exhausted to stack 1, equipped with a baghouse for PM control, approximate capacity: 1.17 tons per hour.

(b) Sand handling operations with a maximum capacity of 20 tons of sand per hour, consisting of the following:

(1) One (1) sand mullor and sand screen, known as EU19, installed in 1982, each equipped with a baghouse for PM control, exhausted to stack 7.

(2) One (1) bucket elevator system for sand, known as EU38, installed in 1995, exhausted to stack 18.

(c) Core making operations with a maximum capacity of 0.34 tons of shell cores per hour and 0.25 tons of phenolic cured ester cores per hour, consisting of the following:

Two (2) core machines, known as EU20 and EU101, installed in 1988, exhausted to stack 8.

(d) One (1) paint booth, known as EU26, installed in 1970, equipped with dry filters as overspray control, exhausted to stack 10, average capacity: 7.9 brass fittings per hour.

(e) Melting operations with a maximum capacity of 2.50 tons of brass or aluminum per hour, consisting of the following:

(1) Three (3) induction melt furnaces known as EU29, EU30 and EU31, with EU29 and EU30 installed in 1985 and exhausting to a fume duct (known as EU34) and stack 14, and EU31 installed in 1987 and exhausting to a fume duct (known as EU35), with all emissions which are not exhausting to the fume ducts exhausted to stack 13, capacity: 2.25 tons per hour, each.

(2) Two (2) natural gas heated swing arm crucible furnaces, known as EU32 and EU33, each installed in 1988 and exhausting to a fume duct (known as EU36), with all emissions which are not exhausting to the fume duct exhausted to stack 13, capacity: 2.25 tons per hour, each.

(f) Pouring, cooling and shakeout operations, with a maximum capacity of 2.50 tons per hour, consisting of the following:

(1) One (1) Sinto casting line, known as EU37, installed in 1999, consisting of mold making, pouring, cooling, and shakeout operations, exhausting to stacks S20 and S17.

(2) One (1) Rollover casting line, consisting of mold making, pouring, cooling, and shakeout operations.

(g) One (1) internal combustion engine, known as Process 011 and EU104, installed in 1990, using natural gas as fuel, exhausted to stack 84, capacity: 3.26 million British thermal units per hour.

(h) Forty-eight (48) natural gas-fired unit heaters, total capacity: 8.93 million British thermal units per hour.

(i) One (1) lead forging bench area, known as EU39, installed in 1977, exhausted to stack 19, capacity: 10 hammer heads per month.

(j) One (1) arc welder, known as EU40, installed in 1969, exhausted to stack 20, capacity: 6 inches per minute.

(k) One (1) acetylene welder, known as EU41, installed in 1969, exhausted to stack 20, capacity: 2 inches per minute.

(l) One (1) acetylene torch/braze/operation, known as EU45, installed in 1969, exhausted to stack 24, capacity: 5 pieces per hour.

(m) The following woodworking operations, with an average capacity of 0.19 pound per hour:

(1) One (1) drill press

(2) One (1) band saw

(3) One (1) wood lathe

(4) One (1) wood planer

(5) One (1) disc sander for wood

(6) One (1) reciprocating sander for wood

(7) One (1) table saw for wood

(n) The following wet metalworking and machining operations:

(1) Seven (7) CNC vertical mills

(2) One (1) CNC horizontal mill

(3) Ten (10) CNC lathes

(4) Five (5) manual vertical mills

(5) Two (2) manual horizontal mills

(6) Five (5) manual lathes

(7) One (1) cold cutoff saw

(8) One (1) abrasive cutoff saw

(9) One (1) surface grinder

(10) Three (3) grinders

(11) One (1) carbide grinder

(12) Ten (10) bench grinders

(13) Fifty (50) hand grinders

(14) Thirty-two (32) drill presses

(15) Four (4) band saws

(16) Thirteen (13) belt sanders

(17) Three (3) punch presses

(18) One (1) radial arm drill

(19) Five (5) multi-station chuckers

(20) One (1) shaper machine

(o) One (1) enclosed cabinet sandblast used for maintenance

(p) Five (5) lift trucks and one (1) skid loader operating on liquid propane gas.

(q) One (1) pipe threader used to apply threads to metal pieces, using a liquid lubricant.

(r) One (1) assembly cold cleaning degreasing unit, known as EU42, installed in 1979, exhausted to stack 21, capacity: 80 gallons, degreasing 1 wire basket per hour and using 165 gallons of solvent per year.

(s) Four (4) small parts washers, installed in October 1988, containing remote solvent reservoirs, using 570 gallons of degreasing agent and recovering 521 gallons of degreasing agent per year.

Response 7:

The applicant was provided an opportunity to comment on the emission unit descriptions prior to public notice. These comments were not received at that time. However, since the requested changes are simply changes in the descriptions of the emission units and will more accurately describe the source, Section A.2 has been revised as requested. The emission unit description boxes in the D Sections are also revised as indicated. Although there has been no new construction at the source, the emissions have been re-evaluated based on the new descriptions provided. Revisions are as follows:

A.2 Emissions Units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

(a) Grinding and finishing operations with a capacity of 1.75 tons of castings per hour consisting of:

(1) One (1) grinder, known as EU1, equipped with a baghouse for PM control, installed in 1987, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(2) One (1) ~~surface~~ **belt** grinder, known as EU2, equipped with a baghouse for PM control, installed in 1985, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(3) One (1) tumblast, known as EU3, equipped with a baghouse for PM control, installed in 1979, exhausted to stack **1** ~~2~~, approximate capacity: 1.17 tons per hour.

(4) One (1) cut off saw, known as EU4, equipped with a baghouse for PM control, installed in 1993, exhausted to stack **1** ~~2~~, approximate capacity: 0.269 tons per hour.

(5) One (1) **belt sander** ~~pga grinder~~, known as EU5, equipped with a cyclone and a baghouse for PM control, installed in 1989, exhausted to stack **1** ~~3~~, approximate capacity: 0.269 tons per hour.

(6) One (1) grinder, known as EU6, equipped with ~~a cyclone and~~ a baghouse for PM control, installed in 1987, exhausted to stack **1** ~~3~~, approximate capacity: 0.269 tons per hour.

(7) One (1) grinder, known as EU7, equipped with ~~a cyclone and~~ a baghouse for PM control, installed in 1985, exhausted to stack **1** ~~3~~, approximate capacity: 0.269 tons per hour.

(8) One (1) belt sander, known as EU8, equipped with ~~a cyclone and~~ a baghouse for PM

control, installed in 1990, exhausted to stack **1** ~~3~~, approximate capacity: 0.269 tons per hour.

~~(9) Two (2) polishers, known as EU9 and EU10, each equipped with a cyclone and a baghouse for PM control, each installed in 1990 and exhausted to stack 4, approximate capacity: 0.125 tons per hour, each.~~

~~(10)~~**(9)** One (1) **polisher** ~~buffing wheel~~, known as EU11, installed in 1992, equipped with a cyclone and a baghouse for PM control, exhausted to stack 5, approximate capacity: 0.125 tons per hour.

~~(11)~~**(10)** One (1) **buffer** ~~wire wheel~~, known as EU12, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 5, approximate capacity: 0.125 tons per hour.

~~(12) One (1) dynablast, known as EU13 installed in 1992, exhausted to stack 6, equipped with barrel top known as SV5 for PM control, approximate capacity: 1.17 tons per hour.~~

~~(13)~~**(11)** One (1) **surface grinder** ~~polisher~~, known as EU14, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

~~(14)~~**(12)** One (1) **wire wheel** ~~polishing lathe~~, known as EU15, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

~~(15)~~**(13)** One (1) **buffer** ~~grinder polisher~~, known as EU16, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.269 tons per hour.

~~(16)~~**(14)** One (1) **buffer** ~~polisher~~, known EU17, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

~~(17)~~**(15)** One (1) **polisher** ~~belt sander~~, known as EU18, installed in 1992, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

~~(18)~~**(16)** One (1) surface grinder, known as EU21, installed in 1978, equipped with a cyclone for PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.

~~(19)~~**(17)** Two (2) tool grinders, known as EU22 and EU23, EU22 installed in 1973 & EU23 installed in 1972, each equipped with a cyclone for PM control, each exhausted to stack 9, approximate capacity: 0.269 tons per hour, each.

~~(20)~~**(18)** One (1) universal grinder, known as EU24, installed in 1973, equipped with a cyclone for PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.

~~(21) One (1) belt sander, known as EU25, installed in 1992, equipped with a cyclone for~~

~~PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.~~

~~(21)~~**(19)** One (1) tumblast, known as EU27, installed in 1990, exhausted to stack **1** ~~11~~, equipped with ~~a cyclone and~~ a baghouse for PM control, approximate capacity: 1.17 tons per hour.

(b) Sand handling operations with a maximum capacity of 20 tons of sand per hour, consisting of the following:

(1) One (1) sand **mullor and sand screen** ~~system~~, known as EU19, installed in 1982, **each equipped with a baghouse for PM control and** exhausted to stack 7.

(2) One (1) bucket elevator system for sand, known as EU38, installed in 1995, exhausted to stack 18.

(c) Core making operations with a maximum capacity of ~~0.06 tons of oil cores per hour,~~ 0.34 tons of shell cores per hour and ~~0.004 tons of Phenol Formaldehyde~~ **0.25 tons of phenolic cured ester** cores per hour, consisting of the following:

~~(1) One (1)~~ **Two (2)** core machine**s**, known as EU20 **and EU101**, installed in 1988, ~~equipped with a cyclone for PM control,~~ exhausted to stack 8.

~~(2) One (1) core oven, known as EU101, installed in 1977, exhausted to stacks 80, 81 and 82, heat input rate: 1 million British thermal unit per hour.~~

(d) One (1) paint booth, known as EU26, installed in 1970, equipped with dry filters as overspray control, exhausted to stack 10, average capacity: 7.9 brass fittings per hour.

(e) Melting operations with a maximum capacity of 2.50 tons of brass or aluminum per hour, consisting of the following:

(1) Three (3) induction melt furnaces known as EU29, EU30 and EU31, with EU29 and EU30 installed in 1985 and exhausting to a fume duct (known as EU34) and stack 14, and EU31 installed in 1987 and exhausting to a fume duct (known as EU35), with all emissions which are not exhausting to the fume ducts exhausted to stack 13, capacity: 2.25 tons per hour, each.

(2) Two (2) natural gas heated swing arm crucible furnaces, known as EU32 and EU33, each installed in 1988 and exhausting to a fume duct (known as EU36), with all emissions which are not exhausting to the fume duct exhausted to stack 13, capacity: 2.25 tons per hour, each.

(f) Pouring, cooling and shakeout operations, with a maximum capacity of 2.50 tons per hour, consisting of the following:

(1) One (1) Sinto casting line, **known as EU37, installed in 1999,** consisting of mold making, pouring, cooling, and shakeout operations, exhausting to stack**s** S20 **and S17**.

(2) One (1) Rollover casting line, consisting of mold making, pouring, cooling, and shakeout operations.

(g) One (1) internal combustion engine, known as Process 011 and ~~EU102~~ **EU104**, installed in 1990, using natural gas as fuel, exhausted to stack~~s 83 and~~ 84, capacity: 3.26 million British thermal units per hour.

(h) Forty-eight (48) natural gas-fired unit heaters, total capacity: 8.93 million British thermal units per hour.

(i) One (1) lead forging bench area, known as EU39, installed in 1977, exhausted to stack 19, capacity: 10 hammer heads per month.

(j) One (1) arc welder, known as EU40, installed in 1969, exhausted to stack 20, capacity: 6 inches per minute.

(k) One (1) acetylene welder, known as EU41, installed in 1969, exhausted to stack 20, capacity: 2 inches per minute.

(l) One (1) acetylene torch/braze/operation, known as EU45, installed in 1969, exhausted to stack 24, capacity: 5 pieces per hour.

(m) The following woodworking operations, with an average capacity of 0.19 pound per hour:

(1) One (1) drill press

(2) One (1) band saw

(3) One (1) wood lathe

(4) One (1) wood planer

(5) One (1) disc sander for wood

(6) One (1) reciprocating sander for wood

(7) One (1) table saw for wood

(n) The following wet metalworking and machining operations:

(1) Seven (7) CNC vertical mills

(2) One (1) CNC horizontal mill

(3) Ten (10) CNC lathes

(4) Five (5) manual vertical mills

(5) Two (2) manual horizontal mills

(6) Five (5) manual lathes

(7) One (1) cold cutoff saw

(8) One (1) abrasive cutoff saw

(9) One (1) surface grinder

(10) Three (3) grinders

(11) One (1) carbide grinder

(12) Ten (10) bench grinders

(13) Fifty (50) hand grinders

(14) Thirty-two (32) drill presses

(15) Four (4) band saws

(16) Thirteen (13) belt sanders

(17) Three (3) punch presses

(18) One (1) radial arm drill

(19) Five (5) multi-station chuckers

(20) One (1) shaper machine

(o) One (1) enclosed cabinet sandblast used for maintenance

(p) Five (5) lift trucks and one (1) skid loader operating on liquid propane gas.

(q) One (1) pipe threader used to apply threads to metal pieces, using a liquid lubricant.

(r) One (1) assembly cold cleaning degreasing unit, known as EU42, installed in 1979, exhausted to stack 21, capacity: 80 gallons, degreasing 1 wire basket per hour and using 165 gallons of solvent per year.

(s) Four (4) small parts washers, installed in October 1988, containing remote solvent reservoirs, using 570 gallons of degreasing agent and recovering 521 gallons of degreasing agent per year.

Since the emissions from the grinding and finishing were calculated based upon the total capacity of the grinding and finishing operations in accordance with the emission factors for SCC 3-04-003-40, the changes in the grinding and finishing operations do not result in changes in the potential to emit. The PSD minor limit in Condition D.1.2 will still apply. Conditions D.1.1 and D.1.4 are revised as follows:

D.1.1 Particulate Matter (PM) [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2, the PM from the one (1) grinder, known as EU1, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(b) Pursuant to 326 IAC 6-3-2, the PM from the one (1) **belt** ~~surface~~ grinder, known as EU2, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(c) Pursuant to 326 IAC 6-3-2, the PM from the one (1) tumblast, known as EU3, shall not exceed

4.55 pounds per hour when operating at a process weight rate of 1.17 tons per hour.

(d) Pursuant to 326 IAC 6-3-2, the PM from the one (1) cut off saw, known as EU4, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(e) Pursuant to 326 IAC 6-3-2, the PM from the one (1) **belt sander** ~~pga grinder~~, known as EU5, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(f) Pursuant to 326 IAC 6-3-2, the PM from the one (1) grinder, known as EU6, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(g) Pursuant to 326 IAC 6-3-2, the PM from the one (1) grinder, known as EU7, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

(h) Pursuant to 326 IAC 6-3-2, the PM from the one (1) belt sander, known as EU8, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

~~(i) Pursuant to 326 IAC 6-3-2, the PM from the two (2) polishers, known as EU9 and EU10, shall not exceed 1.02 pounds per hour, each, when operating at a process weight rate of 0.125 tons per hour, each.~~

~~(j)~~**(i)** Pursuant to 326 IAC 6-3-2, the PM from the one (1) **polisher** ~~buffing wheel~~, known as EU11, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

~~(k)~~**(j)** Pursuant to 326 IAC 6-3-2, the PM from the one (1) **buffer** ~~wire wheel~~, known as EU12, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

~~(l) Pursuant to 326 IAC 6-3-2, the PM from the one (1) dynablast, known as EU13, shall not exceed 4.55 pounds per hour when operating at a process weight rate of 1.17 tons per hour.~~

~~(m)~~**(k)** Pursuant to 326 IAC 6-3-2, the PM from the one (1) **surface grinder** ~~polisher~~, known as EU14, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

~~(n)~~**(l)** Pursuant to 326 IAC 6-3-2, the PM from the one (1) **wire wheel** ~~polishing lathe~~, known as EU15, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

~~(o)~~**(m)** Pursuant to 326 IAC 6-3-2, the PM from the one (1) **buffer** ~~grinder polisher~~, known as EU16, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

~~(p)~~**(n)** Pursuant to 326 IAC 6-3-2, the PM from the one (1) **buffer** ~~polisher~~, known as EU17, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

~~(q)~~**(o)** Pursuant to 326 IAC 6-3-2, the PM from the one (1) **polisher** ~~belt sander~~, known as EU18, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour.

~~(r)~~**(p)** Pursuant to 326 IAC 6-3-2, the PM from the one (1) surface grinder, known as EU21, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

~~(s)~~**(q)** Pursuant to 326 IAC 6-3-2, the PM from each of the two (2) tool grinders, known as EU22 and EU23, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour, each.

~~(t)~~**(r)** Pursuant to 326 IAC 6-3-2, the PM from the one (1) universal grinder, known as EU24, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.

~~(u) Pursuant to 326 IAC 6-3-2, the PM from the one (1) belt sander, known as EU25, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour.~~

~~(v)~~**(s)** Pursuant to 326 IAC 6-3-2, the PM from the one (1) tumblast, known as EU27, shall not exceed 4.55 pounds per hour when operating at a process weight rate of 1.17 tons per hour.

These limitations were based on the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.1.4 Particulate Matter (PM)

(a) The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the grinder, known as EU1, is in operation.

(b) The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the ~~surface~~ **belt** grinder, known as EU2, is in operation.

(c) The baghouse, exhausting to stack **1** ~~2~~, for PM control shall be in operation at all times when the tumblast, known as EU3, is in operation.

(d) The baghouse, exhausting to stack **1** ~~2~~, for PM control shall be in operation at all times when the cut off saw, known as EU4, is in operation.

(e) The ~~cyclone and~~ baghouse, exhausting to stack **1** ~~3~~, for PM control shall be in operation at all times when the **belt sander** ~~pga grinder~~, known as EU5, is in operation.

(f) The ~~cyclone and~~ baghouse, exhausting to stack **1** ~~3~~, for PM control shall be in operation at all times when the grinder, known as EU6, is in operation.

(g) The ~~cyclone and~~ baghouse, exhausting to stack **1** ~~3~~, for PM control shall be in operation at all times when the grinder, known as EU7, is in operation.

(h) The ~~cyclone and~~ baghouse, exhausting to stack **1** ~~3~~, for PM control shall be in operation at all times when the belt sander, known as EU8, is in operation.

~~(i) The cyclone and baghouse, exhausting to stack 4, for PM control shall be in operation at all times when the two (2) polishers, known as EU9 and EU10, are in operation.~~

~~(j)~~**(i)** The cyclone and baghouse, exhausting to stack 5, for PM control shall be in operation at all times when the one (1) **polisher** ~~buffing wheel~~, known as EU11, is in operation.

~~(k)~~**(j)** The cyclone and baghouse, exhausting to stack 5, for PM control shall be in operation at all times when the one (1) **buffer** ~~wire wheel~~, known as EU12, is in operation.

~~(l) The barrel top known as SV5, for PM control shall be in operation at all times when the one (1) dynablast, known as EU13, is in operation.~~

~~(m)~~**(k)** The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the one (1) **surface grinder** ~~polisher~~, known as EU14, is in operation.

~~(n)~~**(l)** The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the one (1) **wire wheel** ~~polishing lathe~~, known as EU15, is in operation.

~~(o)~~**(m)** The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the one (1) **buffer** ~~grinder polisher~~, known as EU16, is in operation.

~~(p)~~**(n)** The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the one (1) **buffer** ~~polisher~~, known as EU17, is in operation.

~~(q)~~**(o)** The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the one (1) **polisher** ~~belt sander~~, known as EU18, is in operation.

~~(r)~~**(p)** The cyclone, exhausting to stack 9, for PM control shall be in operation at all times when the one (1) surface grinder, known as EU21, is in operation.

~~(s)~~**(q)** The cyclone, exhausting to stack 9, for PM control shall be in operation at all times when the two (2) tool grinders, known as EU22 and EU23, are in operation.

~~(t)~~**(r)** The cyclone, exhausting to stack 9, for PM control shall be in operation at all times when the one (1) universal grinder, known as EU24, is in operation.

~~(u) The cyclone, exhausting to stack 9, for PM control shall be in operation at all times when the one (1) belt sander, known as EU25, is in operation.~~

~~(v)~~**(s)** The ~~cyclone and~~ baghouse, exhausting to stack ~~1~~1, for PM control shall be in operation at all times when the one (1) tumblast, known as EU27, is in operation.

The baghouses for the sand mullor and sand screen were not included in the permit because it was indicated by the applicant that they were removed. Since the baghouses have not been removed, they are now included in the facility description. However, operation of the baghouses is not required in order for the sand mullor and sand screen to comply with any rules. Therefore, there are no further changes to Section D.2 as a result of the baghouses being in operation.

As a result of the changes to the description of the core machines, the potential to emit PM from the core machines is 1.60 pounds per hour, equivalent to 7.01 tons per year. The potential to emit PM from the core making was previously calculated at 1.10 pounds per hour, equivalent to 4.82 tons per year. The previous calculation was incorrect because it was based on the throughput of resin and not the total tons of cores produced. Since the potential to emit PM is less than 2.88 pounds per hour, the core making operations will comply with 326 IAC 6-3-2, Process Operations. The cyclone does not exist at the core making operations. The cyclone was not included in the calculation of potential

to emit and is not required in order for the core machines to comply with any rule. See pages 1 and 2 of 2 of TSD Addendum Appendix A for the revised core making calculations. There are no changes in the applicability of any rules as a result of these changes. Condition D.2.1 is revised as follows:

D.2.1 Particulate Matter Limitations (PM) [326 IAC 6-3-2] [326 IAC 2-2]

(a) Pursuant to 326 IAC 6-3-2, the PM from the sand handling operations, known as EU19 and EU38, shall not exceed 30.5 pounds per hour when operating at a process weight rate of 20 tons per hour.

(b) Pursuant to 326 IAC 6-3-2, the PM from the ~~one (1)~~ **two (2)** core machine**s**, known as EU20 **and EU101**, shall not exceed ~~2.23~~ **2.88** pounds per hour**, total,** when operating at a process weight rate of ~~0.404~~ **0.59** tons per hour**, total**.

The pounds per hour limitations were calculated with the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

(c) Any change or modification that increases the potential to emit PM at the sand handling operations, known as EU19, to greater than 1.08 pounds per hour and/or increases the potential to emit at the **total of the** ~~one (1)~~ **two (2)** core machine**s**, known as EU20 **and EU101**, to greater than ~~1.10~~ **1.60** pounds per hour may cause the source to become subject to the requirements of 326 IAC 2-2, Prevention of Significant Deterioration, and prior approval shall be required. These limitations are equal to the potential to emit of each facility.

Due to the correction in capacity of the core making, the PM limit for the grinding and finishing is revised as follows:

D.1.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

The potential to emit PM after controls from the grinding and finishing operations in this section shall be limited to less than ~~4.23~~ **3.94** pounds of PM per ton of metal throughput. This emission rate is achieved by maintaining an average overall capture and control efficiency of no less than ~~seventy-five~~ **seventy-seven** percent ~~(75%)~~ **(77%)** at all equipment controlling the grinding and finishing operations, and result in a potential to emit of no more than ~~7.40~~ **6.90** pounds per hour and ~~32.4~~ **30.2** tons per year of PM from the total of all grinding and cleaning operations. Thus, the total potential to emit of the entire source is less than 100 tons per year, and 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable.

The changes to the Sinto casting line and internal combustion engine descriptions are only descriptive changes. Condition D.4.3 is revised as follows:

D.4.3 Visible Emissions Notations

(a) Visible emission notations of the melting and pouring, cooling and shakeout stacks (stack 13**, S17** and S20) exhausts shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting

startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

Appendix A: Secondary Metal Production
Core Making

Company Name: **Elkhart Brass Mfg. Co., Inc.**
Address City IN Zip: **1302 W. Beardsley Avenue, Elkhart, Indiana 46515**
MSOP: **039-7635**
Plt ID: **039-00072**
Reviewer: **CarrieAnn Ortolani**
Date: **March 21, 2001**

		Throughput tons sand/hr			PM Control	0.0%
Shell Cores		0.34				

3-04-007-07 and 3-04-003-51

	PM	PM10	SOx	NOx	VOC	Allowable PM
Emission Factors lbs/ton produced	2.71	2.22	0.32	0.5	0.0008	326 IAC 6-3-2
Percentage of Emissions	100.00%	100.00%	100.00%	100.00%	100.00%	(lbs/hr)
Potential Emissions lbs/hr	0.921	0.755	0.109	0.170	0.00027	1.99
Potential Emissions tons/yr	4.04	3.31	0.477	0.745	0.001	
Potential Emissions after Controls tons/yr	4.04	3.31	0.477	0.745	0.001	

AIRS emission factors

		Throughput tons sand/hr	Throughput tons binder/hr		PM Control	0.0%
Phenolic Cured Ester		0.250	0.005			

3-04-007-07 and 3-04-003-51

	PM	PM10	SOx	NOx	VOC	Allowable PM
Emission Factors lbs/ton produced (VOC factor lb/ton binder)	2.71	2.22	0.32	0.5	200	326 IAC 6-3-2
Percentage of Emissions	100.00%	100.00%	100.00%	100.00%	100.00%	(lbs/hr)
Potential Emissions lbs/hr	0.678	0.555	0.080	0.125	1.00000	1.62
Potential Emissions tons/yr	2.97	2.43	0.350	0.548	4.38	
Potential Emissions after Controls tons/yr	2.97	2.43	0.350	0.548	4.38	

AIRS emission factors and VOC data from OCMA

	PM	PM10	SOx	NOx	VOC
Total Core Making Emissions in pounds per hour	1.60	1.31	0.189	0.295	1.00
Total Core Making Emissions in tons per year	7.00	5.74	0.827	1.29	4.38

HAP Emission Calculations
Core Making HAPs

Company Name: Elkhart Brass Mfg. Co., Inc.
Address City IN Zip: 1302 W. Beardsley Avenue, Elkhart, Indiana 46515
MSOP: 039-7635
Plt ID: 039-00072
Reviewer: CarrieAnn Ortolani
Date: March 21, 2001

HAPs From Phenolic Cured Ester Cores

Material	Throughput (tons/yr)	HAP	Weight percent	Percent Evaporated	Percent Reacted	Percent Remaining	Potential Emissions (tons/yr)
Alphaset 9010	43.8	Phenol	5.00%	0.00%	90.00%	10.00%	0.219
		Formaldehyde	1.00%	50.00%	0.00%	50.00%	0.438
Alphacure 902	43.8	no HAPs	0.00%	0.00%	0.00%	0.00%	0.000

Summary of HAPs	Potential HAP Before Controls (tons/yr)	Potential HAP After Controls (tons/yr)
Phenol	0.219	0.219
Formaldehyde	0.438	0.438
Total	**0.657**	**0.657**

Methodology

HAP emissions from the core making Resins

Factors from "Form R: Reporting of Binder Chemicals Used in Foundries," American Foundrymen's Society, Inc. & Casting Industry Suppliers Association
Potential emissions are the combination of the evaporative losses and the HAP remaining unreacted.
HAPs remaining in the core after the initial reaction from core making may be emitted during a later process.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Minor Source Operating Permit

Source Background and Description

Source Name:	**Elkhart Brass Manufacturing Company, Inc.**
Source Location:	**1302 W. Beardsley Avenue, Elkhart, Indiana 46515**
County:	**Elkhart**
SIC Code:	**3341**
Operation Permit No.:	**MSOP 039-7635-00072**
Permit Reviewer:	**CarrieAnn Ortolani**

The Office of Air Quality (OAQ) has reviewed an application from Elkhart Brass Manufacturing Company, Inc. relating to the operation of a brass and aluminum fire fighting equipment manufacturing source.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

(a) Grinding and finishing operations with a capacity of 1.75 tons of castings per hour consisting of:

(1) One (1) grinder, known as EU1, equipped with a baghouse for PM control, installed in 1987, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(2) One (1) surface grinder, known as EU2, equipped with a baghouse for PM control, installed in 1985, exhausted to stack 1, approximate capacity: 0.269 tons per hour.

(3) One (1) tumblast, known as EU3, equipped with a baghouse for PM control, installed in 1979, exhausted to stack 2, approximate capacity: 1.17 tons per hour.

(4) One (1) cut off saw, known as EU4, equipped with a baghouse for PM control, installed in 1993, exhausted to stack 2, approximate capacity: 0.269 tons per hour.

(5) One (1) pga grinder, known as EU5, equipped with a cyclone and a baghouse for PM control, installed in 1989, exhausted to stack 3, approximate capacity: 0.269 tons per hour.

(6) One (1) grinder, known as EU6, equipped with a cyclone and a baghouse for PM control, installed in 1987, exhausted to stack 3, approximate capacity: 0.269 tons per hour.

(7) One (1) grinder, known as EU7, equipped with a cyclone and a baghouse for PM control, installed in 1985, exhausted to stack 3, approximate capacity: 0.269 tons per hour.

(8) One (1) belt sander, known as EU8, equipped with a cyclone and a baghouse for PM control, installed in 1990, exhausted to stack 3, approximate capacity: 0.269 tons per hour.

(9) Two (2) polishers, known as EU9 and EU10, each equipped with a cyclone and a baghouse for PM control, each installed in 1990 and exhausted to stack 4, approximate capacity: 0.125 tons per hour, each.

(10) One (1) buffing wheel, known as EU11, installed in 1992, equipped with a cyclone and a baghouse for PM control, exhausted to stack 5, approximate capacity: 0.125 tons per hour.

(11) One (1) wire wheel, known as EU12, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 5, approximate capacity: 0.125 tons per hour.

(12) One (1) dynablast, known as EU13 installed in 1992, exhausted to stack 6, equipped with barrel top known as SV5 for PM control, approximate capacity: 1.17 tons per hour.

(13) One (1) polisher, known as EU14, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(14) One (1) polishing lathe, known as EU15, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(15) One (1) grinder polisher, known as EU16, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.269 tons per hour.

(16) One (1) polisher, known EU17, installed in 1990, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(17) One (1) belt sander, known as EU18, installed in 1992, equipped with a cyclone and a baghouse for PM control, exhausted to stack 6, approximate capacity: 0.125 tons per hour.

(18) One (1) surface grinder, known as EU21, installed in 1978, equipped with a cyclone for PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.

(19) Two (2) tool grinders, known as EU22 and EU23, EU22 installed in 1973 & EU23 installed in 1972, each equipped with a cyclone for PM control, each exhausted to stack 9, approximate capacity: 0.269 tons per hour, each.

(20) One (1) universal grinder, known as EU24, installed in 1973, equipped with a cyclone for PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.

(21) One (1) belt sander, known as EU25, installed in 1992, equipped with a cyclone for PM control, exhausted to stack 9, approximate capacity: 0.269 tons per hour.

(22) One (1) tumblast, known as EU27, installed in 1990, exhausted to stack 11, equipped with a cyclone and a baghouse for PM control, approximate capacity: 1.17 tons per hour.

(b) Sand handling operations with a maximum capacity of 20 tons of sand per hour, consisting of the following:

(1) One (1) sand system, known as EU19, installed in 1982, exhausted to stack 7.

(2) One (1) bucket elevator system for sand, known as EU38, installed in 1995, exhausted to stack 18.

(c) Core making operations with a maximum capacity of 0.06 tons of oil cores per hour, 0.34 tons of shell cores per hour and 0.004 tons of Phenol Formaldehyde cores per hour, consisting of the following:

(1) One (1) core machine, known as EU20, installed in 1988, equipped with a cyclone for PM control, exhausted to stack 8.

(2) One (1) core oven, known as EU101, installed in 1977, exhausted to stacks 80, 81 and 82, heat input rate: 1 million British thermal unit per hour.

(d) One (1) paint booth, known as EU26, installed in 1970, equipped with dry filters as overspray control, exhausted to stack 10, average capacity: 7.9 brass fittings per hour.

(e) Melting operations with a maximum capacity of 2.50 tons of brass or aluminum per hour, consisting of the following:

(1) Three (3) induction melt furnaces known as EU29, EU30 and EU31, with EU29 and EU30 installed in 1985 and exhausting to a fume duct (known as EU34) and stack 14, and EU31 installed in 1987 and exhausting to a fume duct (known as EU35), with all emissions which are not exhausting to the fume ducts exhausted to stack 13, capacity: 2.25 tons per hour, each.

(2) Two (2) natural gas heated swing arm crucible furnaces, known as EU32 and EU33, each installed in 1988 and exhausting to a fume duct (known as EU36), with all emissions which are not exhausting to the fume duct exhausted to stack 13, capacity: 2.25 tons per hour, each.

(f) Pouring, cooling and shakeout operations, with a maximum capacity of 2.50 tons per hour, consisting of the following:

(1) One (1) Sinto casting line, consisting of mold making, pouring, cooling, and shakeout operations, exhausting to stack S20.

(2) One (1) Rollover casting line, consisting of mold making, pouring, cooling, and shakeout operations.

(g) One (1) internal combustion engine, known as Process 011 and EU102, installed in 1990, using natural gas as fuel, exhausted to stacks 83 and 84, capacity: 3.26 million British thermal units per hour.

(h) Forty-eight (48) natural gas-fired unit heaters, total capacity: 8.93 million British thermal units per hour.

(i) One (1) lead forging bench area, known as EU39, installed in 1977, exhausted to stack 19, capacity: 10 hammer heads per month.

(j) One (1) arc welder, known as EU40, installed in 1969, exhausted to stack 20, capacity: 6 inches per minute.

(k) One (1) acetylene welder, known as EU41, installed in 1969, exhausted to stack 20, capacity: 2 inches per minute.

(l) One (1) acetylene torch/braze/operation, known as EU45, installed in 1969, exhausted to stack 24, capacity: 5 pieces per hour.

(m) The following woodworking operations, with an average capacity of 0.19 pound per hour:

(1) One (1) drill press

(2) One (1) band saw

(3) One (1) wood lathe

(4) One (1) wood planer

(5) One (1) disc sander for wood

(6) One (1) reciprocating sander for wood

(7) One (1) table saw for wood

(n) The following wet metalworking and machining operations:

(1) Seven (7) CNC vertical mills

(2) One (1) CNC horizontal mill

(3) Ten (10) CNC lathes

(4) Five (5) manual vertical mills

(5) Two (2) manual horizontal mills

(6) Five (5) manual lathes

(7) One (1) cold cutoff saw

(8) One (1) abrasive cutoff saw

(9) One (1) surface grinder

(10) Three (3) grinders

(11) One (1) carbide grinder

(12) Ten (10) bench grinders

(13) Fifty (50) hand grinders

(14) Thirty-two (32) drill presses

(15) Four (4) band saws

(16) Thirteen (13) belt sanders

(17) Three (3) punch presses

(18) One (1) radial arm drill

(19) Five (5) multi-station chuckers

(20) One (1) shaper machine

(o) One (1) enclosed cabinet sandblast used for maintenance

(p) Five (5) lift trucks and one (1) skid loader operating on liquid propane gas.

(q) One (1) pipe threader used to apply threads to metal pieces, using a liquid lubricant.

(r) One (1) assembly cold cleaning degreasing unit, known as EU42, installed in 1979, exhausted to stack 21, capacity: 80 gallons, degreasing 1 wire basket per hour and using 165 gallons of solvent per year.

(s) Four (4) small parts washers, installed in October 1988, containing remote solvent reservoirs, using 570 gallons of degreasing agent and recovering 521 gallons of degreasing agent per year.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

New Emission Units and Pollution Control Equipment

There are no new facilities proposed at this source during this review process.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

(a) OP 20-05-87-0615, issued on May 31, 1983;

(b) Registered Operation Status, Old Permit No. 20-05-87-0616, issued on June 9, 1987; and

(c) Significant Source Modification 039-10941-00072, issued on July 8, 1999.

All conditions from previous approvals were incorporated into this permit.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for a Part 70 permit was received on December 13, 1996. Additional information was received on September 11 and September 28, 1998, December 1, 1999, December 23, 1999 and January 19, 2000. In response to the letter received on February 18, 2000, this application will be processed as a Minor Source Operating Permit (MSOP). Additional information was received on August 3 and December 14, 2000.

Emission Calculations

See pages 1 through 12 of Appendix A of this document for detailed emissions calculations. The emissions from the lead forging are not quantified because the process makes only about 10 lead hammer heads each month used internally for maintenance. The sandblast unit is totally enclosed and there are no PM emissions outside of the enclosure.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	**Potential To Emit** (tons/year)
PM	197
PM_{10}	79.9
SO_2	28.2
VOC	52.2
CO	70.8

NO_X	25.5

HAPs	**Potential To Emit** (tons/year)
Manganese	0.162
Lead	3.52
Nickel	0.839
Phenols	0.013
Benzene	0.091
Toluene	0.138
Xylenes	2.16
Naphthalene	1.16
Formaldehyde	2.37
Acrolein	0.007
MDI	0.0004
Glycol Ethers	0.079
Dichlorobenzene	0.00006
Hexane	0.096
Cadmium	0.00006
Chromium	0.058
Phosphorus	0.024
Ethyl benzene	0.138
MEK	0.142
MIBK	0.075
Methanol	0.033
TOTAL	8.64

(a) The potentials to emit (as defined in 326 IAC 2-1.1-1(16)) of PM, PM_{10}, SO_2, and VOC are equal to or greater than 25 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1.

(b) The potentials to emit (as defined in 326 IAC 2-1.1-1(16)) of PM_{10}, NO_X, CO, SO_2 and VOC are less than one hundred (100) tons per year. The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination HAPs is less than or equal to twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7, Part 70. Note that for 326 IAC 2-7 applicability, PM_{10}, not PM, is the regulated pollutant. Therefore,

although the potential to emit PM is greater than one hundred (100) tons per year before controls, the requirements of 326 IAC 2-7 are not applicable.

Actual Emissions

The following table shows the actual emissions from the existing source. This information reflects the 1998 emission data supplied by the source. With the exception of lead, the HAP emissions are the emissions on file at the OAQ.

Pollutant	**Actual Emissions** (tons/year)
PM	5.34
PM_{10}	5.29
SO_2	0.002
VOC	3.10
CO	6.90
NO_X	0.399
HAP (Lead)	0.294
HAP (Xylene)	1.30
HAP (MEK)	0.035
HAP (Ethyl benzene)	0.088
HAP (Toluene)	0.024
HAP (MIBK)	0.023

Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

	Potential to Emit (tons/year)						
Process/facility	**PM**	**PM_{10}**	**SO_2**	**VOC**	**CO**	**NO_X**	**HAPS**
Grinding and cleaning	1.30 (32.4)	0.130	0.00	0.00	0.00	0.00	0.00
Sand handling	4.72	4.72	0.00	0.00	0.00	0.00	0.00
Core making	4.81	3.97	0.570	3.53	0.368	1.32	1.15
Paint booth	0.007	0.007	0.00	2.74	0.00	0.00	1.74
Melting operations	31.9	31.9	27.4	27.4	0.00	18.6	1.17

	Potential to Emit (tons/year)						
Process/facility	PM	PM_{10}	SO_2	VOC	CO	NO_X	HAPS
Pouring, cooling and shakeout operations	25.3	25.3	0.219	14.7	65.9	0.110	2.96
One (1) internal combustion engine and forty-eight (48) unit heaters	0.101	0.406	0.032	0.294	4.49	5.34	0.102
Vehicles operating on propane	0.004	0.004	0.00	0.006	0.021	0.157	0.00
Welding, cutting, forging	0.004	0.004	0.00	0.00	0.00	0.00	negligible
Degreasing	0.00	0.00	0.00	0.894	0.00	0.00	0.044
Woodworking	0.042	0.042	0.00	0.00	0.00	0.00	0.00
Metalworking and machining, and pipe threading	0.00	0.00	0.00	0.035	0.00	0.00	0.035
Total Emissions	68.2 (< 100)	66.5	28.2	49.6	70.8	25.5	7.20

For Particulate Matter (PM), the values in the table represent the potentials to emit after controls, and the values in parenthesis represent the limited potentials to emit resulting from permit limits. For all other pollutants, the values in the table represent the potential to emit after permit limitations, since there are no devices controlling those emissions.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM_{10}	attainment
SO_2	attainment
NO_2	attainment
Ozone	maintenance
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_X) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as main-

tenance for ozone. Therefore, VOC and NO_X emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Elkhart County has been classified as attainment or unclassifiable for all criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	68.2
PM_{10}	66.5
SO_2	28.2
VOC	49.6
CO	70.8
NO_X	25.5

(a) This existing source is not a major stationary source because even though it is one of the 28 listed source categories (secondary metal production), it does not emit one hundred (100) tons per year or greater of any regulated pollutants.

(b) These emissions are based on the limited potential to emit of all facilities, and not the actual emission data, because the actual emissions from 1998 included the Hunter Line, which has since been removed, and did not include the Sinto Line, which was added since 1998.

(c) Fugitive Emissions
Since this type of operation is one of the twenty-eight (28) listed source categories under 326 IAC 2-2, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD and Emission Offset applicability.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, including the emissions from OP 20-05-87-0615, issued on May 31, 1983, Registered Operation Status, Old Permit No. 20-05-87-0616, issued on June 9, 1987, and Significant Source Modification 039-10941-00072, issued on July 8, 1999, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than one hundred (100) tons per year,

(b) a single hazardous air pollutant (HAP) is less than ten (10) tons per year, and

(c) any combination of HAPS is less than twenty-five (25) tons per year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAQ inspector assigned to the source.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

(b) This source is not subject to the requirements of the New Source Performance Standard, 326 IAC 12, 40 CFR 60.130, Subpart M, New Source Performance Standards for Secondary Brass and Bronze Production because, pursuant to 40 CFR 60.130, furnaces from which molten brass are cast into the shape of finished products, such as foundry processes, are not considered affected facilities.

(c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14, 326 IAC 20, 40 CFR Part 61, and 40 CFR Part 63) applicable to this source.

(d) The cold cleaning degreasing unit and the four (4) parts washers are not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart T because these units do not use halogenated solvents.

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration)

Although the potential PM emissions before controls is greater than 100 tons per year at this source, which is in one (1) of the twenty-eight (28) listed source categories, the potential to emit PM after controls is less than 100 tons per year. Therefore, this source is a minor source pursuant to 326 IAC 2-2, PSD. In order to remain a minor source, the potential to emit PM after controls from the grinding and finishing operations listed as item (a) shall be less than 4.23 pounds of PM per ton of metal throughput. This emission rate is achieved by maintaining an average overall capture and control efficiency of no less than seventy-five percent (75%) at all equipment controlling the grinding and finishing operations. This will result in a potential to emit of no more than 7.40 pounds per hour and 32.4 tons per year of PM from the total of all grinding and cleaning operations. Thus, the total potential to emit of the entire source is less than 100 tons per year.

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than ten (10) tons per year of VOC in Elkhart County. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1-1 (New Source Toxics Control)

This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments. Therefore, the requirements of 326 IAC 2-4.1-1, New Source Toxics Control, are not applicable.

326 IAC 6-3-2 (Process Operations)

(a) Pursuant to 326 IAC 6-3-2, the PM from the one (1) grinder, known as EU1, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) grinder, known as EU1, will comply with this rule. The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the grinder is in operation in order for the facility to comply with this rule.

(b) Pursuant to 326 IAC 6-3-2, the PM from the one (1) surface grinder, known as EU2, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) surface grinder, known as EU2, will comply with this rule. The baghouse, exhausting to stack 1, for PM control shall be in operation at all times when the grinder is in operation in order for the facility to comply with this rule.

(c) Pursuant to 326 IAC 6-3-2, the PM from the one (1) tumblast, known as EU3, shall not exceed 4.55 pounds per hour when operating at a process weight rate of 1.17 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) tumblast, known as EU3, will comply with this rule. The baghouse, exhausting to stack 2, for PM control shall be in operation at all times when the tumblast is in operation in order for the facility to comply with this rule.

(d) Pursuant to 326 IAC 6-3-2, the PM from the one (1) cut off saw, known as EU4, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) cut off saw, known as EU4, will comply with this rule. The baghouse, exhausting to stack 2, for PM control shall be in operation at all times when the cut off saw is in operation in order for the facility to comply with this rule.

(e) Pursuant to 326 IAC 6-3-2, the PM from the one (1) pga grinder, known as EU5, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) pga grinder, known as EU5, will comply with this rule. The cyclone and baghouse, exhausting to stack 3, for PM control shall be in operation at all times

when the pga grinder is in operation in order for the facility to comply with this rule.

(f) Pursuant to 326 IAC 6-3-2, the PM from the one (1) grinder, known as EU6, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) grinder, known as EU6, will comply with this rule. The cyclone and baghouse, exhausting to stack 3, for PM control shall be in operation at all times when the grinder is in operation in order for the facility to comply with this rule.

(g) Pursuant to 326 IAC 6-3-2, the PM from the one (1) grinder, known as EU7, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) grinder, known as EU7, will comply with this rule. The cyclone and baghouse, exhausting to stack 3, for PM control shall be in operation at all times when the grinder is in operation in order for the facility to comply with this rule.

(h) Pursuant to 326 IAC 6-3-2, the PM from the one (1) belt sander, known as EU8, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) belt sander, known as EU8, will comply with this rule. The cyclone and baghouse, exhausting to stack 3, for PM control shall be in operation at all times when the belt sander is in operation in order for the facility to comply with this rule.

(i) Pursuant to 326 IAC 6-3-2, the PM from the two (2) polishers, known as EU9 and EU10, shall not exceed 1.02 pounds per hour, each, when operating at a process weight rate of 0.125 tons per hour, each. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the two (2) polishers, known as EU9 and EU10, will comply with this rule. The cyclone and baghouse, exhausting to stack 4, for PM control shall be in operation at all times when the two (2) polishers are in operation in order for the facilities to comply with this rule.

(j) Pursuant to 326 IAC 6-3-2, the PM from the one (1) buffing wheel, known as EU11, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) buffing wheel, known as EU11, will comply with this rule. The cyclone and baghouse, exhausting to stack 5, for PM control shall be in operation at all times when the buffing wheel is in operation in order for the facility to comply with this rule.

(k) Pursuant to 326 IAC 6-3-2, the PM from the one (1) wire wheel, known as EU12, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) wire wheel, known as EU12, will comply with this rule. The cyclone and baghouse, exhausting to stack 5, for PM control shall be in operation at all times when the wire wheel is in operation in order for the facility to comply with this rule.

(l) Pursuant to 326 IAC 6-3-2, the PM from the one (1) dynablast, known as EU13, shall not exceed 4.55 pounds per hour when operating at a process weight rate of 1.17 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) dynablast, known as EU13, will comply with this rule. The barrel top known as SV5, for PM control shall be in operation at all times when the dynablast is in operation in order for the facility to comply with this rule.

(m) Pursuant to 326 IAC 6-3-2, the PM from the one (1) polisher, known as EU14, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) polisher, known as EU14, will comply with this rule. The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the polisher is in operation in order for the facility to comply with this rule.

(n) Pursuant to 326 IAC 6-3-2, the PM from the one (1) polishing lathe, known as EU15, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) polishing lathe, known as EU15, will comply with this rule. The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the polishing lathe is in operation in order for the facility to comply with this rule.

(o) Pursuant to 326 IAC 6-3-2, the PM from the one (1) grinder polisher, known as EU16, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) grinder polisher, known as EU16, will comply with this rule. The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the grinder polisher is in operation in order for the facility to comply with this rule.

(p) Pursuant to 326 IAC 6-3-2, the PM from the one (1) polisher, known as EU17, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) polisher, known as EU17, will comply with this rule. The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the polisher is in operation in order for the facility to comply with this rule.

(q) Pursuant to 326 IAC 6-3-2, the PM from the one (1) belt sander, known as EU18, shall not exceed 1.02 pounds per hour when operating at a process weight rate of 0.125 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) belt sander, known as EU18, will comply with this rule. The cyclone and baghouse, exhausting to stack 6, for PM control shall be in operation at all times when the belt sander is in operation in order for the facility to comply with this rule.

(r) Pursuant to 326 IAC 6-3-2, the PM from the one (1) surface grinder, known as EU21, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) polisher, known as EU21, will comply with this rule. The cyclone, exhausting to stack 9, for PM control shall be in operation at all times when the surface grinder is in operation in order for the facility to comply with this rule.

(s) Pursuant to 326 IAC 6-3-2, the PM from each of the two (2) tool grinders, known as EU22 and EU23, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour, each. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the two (2) tool grinders, known as EU22 and EU23, will comply with this rule. The cyclone, exhausting to stack 9, for PM control shall be in operation at all times when the two (2) tool grinders are in operation in order for the facilities to comply with this rule.

(t) Pursuant to 326 IAC 6-3-2, the PM from the one (1) universal grinder, known as EU24, shall

not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) universal grinder, known as EU24, will comply with this rule. The cyclone, exhausting to stack 9, for PM control shall be in operation at all times when the universal grinder is in operation in order for the facility to comply with this rule.

(u) Pursuant to 326 IAC 6-3-2, the PM from the one (1) belt sander, known as EU25, shall not exceed 1.70 pounds per hour when operating at a process weight rate of 0.269 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) belt sander, known as EU25, will comply with this rule. The cyclone, exhausting to stack 9, for PM control shall be in operation at all times when the belt sander is in operation in order for the facility to comply with this rule.

(v) Pursuant to 326 IAC 6-3-2, the PM from the one (1) tumblast, known as EU27, shall not exceed 4.55 pounds per hour when operating at a process weight rate of 1.17 tons per hour. Since the potential to emit PM after controls from the total of all grinding and finishing is 0.297 pounds per hour, the one (1) tumblast, known as EU27, will comply with this rule. The cyclone and baghouse, exhausting to stack 11, for PM control shall be in operation at all times when the tumblast is in operation in order for the facility to comply with this rule.

(w) Pursuant to 326 IAC 6-3-2, the PM from the sand handling operations, known as EU19 and EU38, shall not exceed 30.5 pounds per hour when operating at a process weight rate of 20 tons per hour. Since the potential to emit PM before controls from the sand handling is 1.08 pounds per hour, the sand handling will comply with this rule.

(x) Pursuant to 326 IAC 6-3-2, the PM from the one (1) core machine, known as EU20, shall not exceed 2.23 pounds per hour when operating at a process weight rate of 0.404 tons per hour. Since the potential to emit PM before controls from the core machines is 1.10 pounds per hour, the one (1) core machine, known as EU20, will comply with this rule.

(y) Pursuant to 326 IAC 6-3-2, the PM from the melt furnaces, known as EU29, EU30, EU31, EU32 and EU33, shall not exceed 7.58 pounds per hour when operating at a process weight rate of 2.5 tons per hour. Since the maximum potential to emit PM is 7.28 pounds per hour, the melt furnaces will comply with this rule.

(z) Pursuant to 326 IAC 6-3-2, the PM from the pouring, cooling and shakeout operations, known as the Sinto Casting Line and the Rollover Casting Line, shall not exceed 7.58 pounds per hour when operating at a process weight rate of 2.5 tons per hour. Since the maximum potential to emit PM is 5.78 pounds per hour, the pouring, cooling and shakeout operations will comply with this rule.

These limitations are based on the following equations:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

(aa) The particulate matter (PM) from the one (1) paint booth shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

The dry filters for overspray control shall be in operation at all times when the paint booth is in operation in order for this facility to comply with this rule.

(bb) The particulate matter (PM) from the lead forging bench, arc welder, acetylene welder, acetylene torch/braze operation, woodworking operations, and cabinet sandblast shall each not exceed 0.551 pounds per hour when operating at a process weight rate of less than 100 pounds per hour. According to the information provided in this application, these facilities will comply with this rule.

326 IAC 7 (Sulfur Dioxide Emission Limitations)

The two (2) swing arm crucible furnaces, known as EU32 and EU33, have a potential to emit more than 25 tons per year of SO_2. Therefore, the requirements of 326 IAC 7 are applicable. Since the crucible furnaces are heated by natural gas, there are no specific limitations pursuant to this rule.

326 IAC 8-2-9 (Miscellaneous Metal Coating)

The applicant has agreed to limit the potential to emit VOC at the one (1) paint booth to less than 15 pounds per day. Therefore, the requirements of 326 IAC 8-2-9 are not applicable.

326 IAC 8-3-2 (Organic Solvent Degreasing Operations)

Since the four (4) small parts washers were existing as of January 1, 1980 and the total PTE of VOC is less than 100 tons per year in Elkhart County, the requirements of 326 IAC 8-3-2 are not applicable. Since the four (4) small parts washers are equipped with remote solvent reservoirs, the requirements of 326 IAC 8-3-5 are not applicable.

326 IAC 8-3-5 (Organic Solvent Degreasing Operations)

Since the one (1) assembly cold cleaning degreasing unit known as EU42 was existing as of July 1, 1990 in Elkhart County and does not have a remote solvent reservoir, the requirements of 326 IAC 8-3-5 are applicable.

(a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), the owner or operator of the one (1) assembly cold cleaning degreasing unit shall ensure that the following control equipment requirements are met:

(1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:

(A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF));

(B) The solvent is agitated; or

(C) The solvent is heated.

(2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of

mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

(3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).

(4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.

(5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9EC) (one hundred twenty degrees Fahrenheit (120EF)):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

(B) A water cover when the solvent used is insoluble in, and heavier than, water.

(C) Other systems of demonstrated equivalent control such as a refrigerated chiller of carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.

(b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of the one (1) assembly cold cleaning degreasing unit shall ensure that the following operating requirements are met:

(1) Close the cover whenever articles are not being handled in the degreaser.

(2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.

(3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

326 IAC 9-1 (Carbon Monoxide Emission Limitations)

There are CO emissions from natural gas and propane combustion and from pouring and cooling operations. Since none of the CO emissions are from petroleum refining, ferrous metal smelting or refuse incineration, there are no specific limitations applicable pursuant to this rule.

Conclusion

The operation of this brass and aluminum fire fighting equipment manufacturing source shall be subject to the conditions of the attached proposed Minor Source Operating Permit 039-7635-00072.

Appendix A: Secondary Metal Production
Grinding, Cleaning and Woodworking

Company Name: **Elkhart Brass Mfg. Co., Inc.**
Address City IN Zip: **1302 W. Beardsley Avenue, Elkhart, Indiana 46515**
MSOP: **039-7635**
Plt ID: **039-00072**
Reviewer: **CarrieAnn Ortolani**
Date: **December 13, 1996**

Process	Throughput tons/hr		
Grinding and Finishing	1.75	PM Control	99.0%

SCC 3-04-003-40

	PM	PM10
Emission Factors lbs/ton metal processed	17	1.7
Percentage of Emissions	100.00%	100.00%
Potential Emissions lbs/hr	29.8	2.98
Potential Emissions tons/yr	130	13.0
Potential Emissions after controls lbs/hr	0.297	0.030
Potential Emissions after Controls tons/yr	1.30	0.130

AIRS emission factor

Degreasing and machining

Emission Unit	Material	Density (lbs/gal)	Usage (gals/yr)	Weight % VOC	VOC Emissions (tons/yr)	Weight % HAP (glycol ethers)	HAP Emissions (tons/yr)
Assembly area degreaser	ZEP Formula 50	8.35	165	100.00%	0.689	5.00%	0.034
Four (4) small parts washers	ZEP Formula 50	8.35	49	100.00%	0.205	5.00%	0.010
Machining	Melsol 3030	8.09	6950	0.10%	0.028	0.10%	0.028
Pipe Threader	Melsol 3030	8.09	1840	0.10%	0.007	0.10%	0.007

VOC Emissions (tons/yr) = Density (lbs/gal) x Usage (gal/yr) x Weight % VOC
HAP Emissions (tons/yr) = Density (lbs/gal) x Usage (gal/yr) x Weight % HAP

Woodworking

Wood Throughput (lbs/hr)	Percent Wood Converted to Sawdust	Percent PM Emitted	PM Emission Rate (lbs/hr)	PM Emission Rate (tons/yr)
0.19	50.0%	10.0%	0.010	0.042

These calculations were provided by the applicant.
Wood Throughput (lbs/hr) is based on the wood purchasing records, the actual hours of operation and the density of southern pine wood (42.0 lbs/cub. ft.)
PM emission rate (lbs/hr) = Wood Throughput (lbs/hr) x Percent Wood Converted to Sawdust (engineering estimate) x Percent PM Emitted (engineering estimate)
PM emission rate (tons/yr) = PM emission rate (lbs/hr) x 8,760 hrs/yr / 2,000 lbs/ton

Appendix A: Secondary Metal Production
Sand Handling

Company Name: **Elkhart Brass Mfg. Co., Inc.**
Address City IN Zip: **1302 W. Beardsley Avenue, Elkhart, Indiana 46515**
MSOP: **039-7635**
Plt ID: **039-00072**
Reviewer: **CarrieAnn Ortolani**
Date: **December 13, 1996**

Process

Sand Handling

Dust Captured in Dust Collector* (lbs/week)	Sand Throughput (tons/week)	PM Control Efficiency*	PM Generated (lbs/week)	Emission Factor (lbs PM /ton of Sand)	Maximum Sand Throughput (tons/hr)	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)
20	375	99.0%	20.2	0.054	20	1.08	4.72

* The dust collector has been removed from operation.

Allowable Emissions

Process weight rate (tons/hr)	Allowable Emissions (lbs/hr)	Potential to Emit (lbs/hr)
20	30.5	1.08

Methodology

Dust Captured and corresponding sand throughput provided by the applicant.
PM generated = dust captured (lbs/week) / PM control efficiency
Emission factor = PM generated / sand throughput
Potential to emit = Maximum sand throughput * emission factor
Allowable Emissions = 4.10 * Process weight rate (tons/hr)^0.67

Appendix A: Secondary Metal Production
Core Making

Company Name: Elkhart Brass Mfg. Co., Inc.
Address City IN Zip: 1302 W. Beardsley Avenue, Elkhart, Indiana 46515
MSOP: 039-7635
Plt ID: 039-00072
Reviewer: CarrieAnn Ortolani
Date: December 13, 1996

Sand Process: Oil Cores — Throughput tons sand/hr: 0.06 — PM Control: 0.0%

3-04-007-07 and 3-04-003-51

	PM	PM10	SOx	NOx	VOC	Allowable PM 326 IAC 6-3-2 (lbs/hr)
Emission Factors lbs/ton produced	2.71	2.22	0.32	0.5	0.0008	
Percentage of Emissions	100.00%	100.00%	100.00%	100.00%	100.00%	
Potential Emissions lbs/hr	0.163	0.133	0.019	0.030	0.00005	0.62
Potential Emissions tons/yr	0.712	0.583	0.084	0.131	0.0002	
Potential Emissions after Controls tons/yr	0.712	0.583	0.084	0.131	0.0002	

AIRS emission factors

Sand Process: Shell Cores — Throughput tons sand/hr: 0.34 — PM Control: 0.0%

3-04-007-07 and 3-04-003-51

	PM	PM10	SOx	NOx	VOC	Allowable PM 326 IAC 6-3-2 (lbs/hr)
Emission Factors lbs/ton produced	2.71	2.22	0.32	0.5	0.0008	
Percentage of Emissions	100.00%	100.00%	100.00%	100.00%	100.00%	
Potential Emissions lbs/hr	0.921	0.755	0.109	0.170	0.00027	1.99
Potential Emissions tons/yr	4.036	3.306	0.477	0.745	0.0012	
Potential Emissions after Controls tons/yr	4.036	3.306	0.477	0.745	0.0012	

AIRS emission factors

Sand Process: Phenol Formaldehyde Cores — Throughput tons sand/hr: 0.004 — PM Control: 0.0%

3-04-007-07 and 3-04-003-51

	PM	PM10	SOx	NOx	VOC	Allowable PM 326 IAC 6-3-2 (lbs/hr)
Emission Factors lbs/ton produced	2.71	2.22	0.32	0.5	200	
Percentage of Emissions	100.00%	100.00%	100.00%	100.00%	100.00%	
Potential Emissions lbs/hr	0.011	0.009	0.001	0.002	0.80000	0.10
Potential Emissions tons/yr	0.047	0.039	0.006	0.009	3.5040	
Potential Emissions after Controls tons/yr	0.047	0.039	0.006	0.009	3.5040	

AIRS emission factors and VOC data from OCMA

Core Oven Combustion

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
1.0	8.8

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.008	0.033	0.003	0.438	0.024	0.368

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology for Combustion

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

HAP Emission Calculations
Core Making HAPs

Company Name: Elkhart Brass Mfg. Co., Inc.
Address City IN Zip: 1302 W. Beardsley Avenue, Elkhart, Indiana 46515
MSOP: 039-7635
Plt ID: 039-00072
Reviewer: CarrieAnn Ortolani
Date: December 13, 1996

HAPs From One (1) Phenol Formaldehyde Cores

Material	Throughput (tons/yr)	HAP	Weight percent	Percent Evaporated	Percent Reacted	Percent Remaining	Potential Emissions (tons/yr)
Part I	15.1	Phenol	0.00%	0.00%	90.00%	10.00%	0.000
		Napthalene	4.00%	50.00%	0.00%	50.00%	0.604
Part II	11	MDI	34.00%	0.00%	99.99%	0.01%	0.0004
		Napthalene	2.50%	50.00%	0.00%	50.00%	0.275
Activator	4.58	Napthalene	6.00%	50.00%	0.00%	50.00%	0.275

Summary of HAPs	Potential HAP Before Controls (tons/yr)	Potential HAP After Controls (tons/yr)
Napthalene	1.15	1.15
MDI	0.0004	0.0004
Total	**1.15**	**1.15**

Methodology

HAP emissions from the metal

Percentage of HAPs in Metal Castings From AP-42

HAP emissions from the core making Resins

Factors from "Form R: Reporting of Binder Chemicals Used in Foundries," American Foundrymen's Society, Inc. & Casting Industry Suppliers Association
Potential emissions are the combination of the evaporative losses and the HAP remaining unreacted.
HAPs remaining in the core after the initial reaction from core making may be emitted during a later process.

Appendix A: Federal Potential Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: Elkhart Brass Mfg. Co., Inc.
Address City IN Zip: 1302 W. Beardsley Avenue, Elkhart, Indiana 46515
MSOP: 039-7635
Plt ID: 039-00072
Reviewer: CarrieAnn Ortolani
Date: December 13, 1996

Material	Density (lb/gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Vol (solids)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Flash-off (fraction)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential tons per year	lb VOC /gal solids	Transfer Efficiency
EU-26																	
SV-10																	
Red Urethane	8.59	56.00%	0.0%	56.0%	0.0%	34.71%	0.01670	7.900	1.000	4.81	4.81	0.63	15.23	2.780	0.55	13.86	75%
Primer	7.77	82.10%	0.0%	82.1%	0.0%	11.30%	0.00310	7.900	1.000	6.38	6.38	0.16	3.75	0.684	0.04	56.45	75%
Xylene	7.25	100.00%	0.0%	100.0%	0.0%	0.00%	0.00437	7.900	1.000	7.25	7.25	0.25	6.00	1.095	0.00	N/A	75%
Acid Thinner	7.11	96.40%	0.0%	96.4%	0.0%	2.00%	0.00240	7.900	1.000	6.85	6.85	0.13	3.12	0.569	0.01	342.70	75%
Urethane Hardener	8.13	55.00%	0.0%	55.0%	0.0%	37.31%	0.00120	7.900	1.000	4.47	4.47	0.04	1.02	0.186	0.04	11.98	75%
State Potential Emissions			**Add worst case coating to all solvents**								**Potential to Emit:**	**1.21**	**29.1**	**5.31**	**0.627**		

Control Technology Emissions (Combustion)																
						Emission Factors							Emissions			
Type	Number	Capacity	Gas usage	PM	PM10	SO2	NOx	VOC	CO		PM	PM10	SO2	NOx	VOC	CO
		MMBtu/hr	MMCF/yr	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF		tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Catalytic			0.0	3.0	3.0	0.6	100.0	5.3	35.0		0.0	0.0	0.0	0.0	0.0	0.0
Thermal			0.0	3.0	3.0	0.6	140.0	2.8	20.0		0.0	0.0	0.0	0.0	0.0	0.0
Total			0.0								0.0	0.0	0.0	0.0	0.0	0.0
										Control Efficiency		Controlled	Controlled	Controlled	Controlled	
										VOC	PM	VOC pounds	VOC pounds	VOC	Particulate	
										0.00%	**98%**	per hour	per day	tons/yr	tons/yr	
Controlled Emissions due to Surface Coating Operations and Controls												**1.21**	**29.1**	**5.31**	**0.013**	

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * Flash-off
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day) * Flash-off
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs) * Flash-off
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids) * Flash-off
Total = Worst Coating + Sum of all solvents used

Appendix A: Emission Calculations
HAP Emission Calculations

Company Name: Elkhart Brass Mfg. Co., Inc.
Address City IN Zip: 1302 W. Beardsley Avenue, Elkhart, Indiana 46515
MSOP: 039-7635
Plt ID: 039-00072
Reviewer: CarrieAnn Ortolani
Date: December 13, 1996

Material	Density (lbs/gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Phosphorus	Weight % Ethylbenzene	Weight % MEK	Weight % MIBK	Weight % Methanol	Weight % Chromium	Xylene (tons/yr)	Toluene (tons/yr)	Phosphorus (tons/yr)	Ethylbenzene (tons/yr)	MEK (tons/yr)	MIBK (tons/yr)	Methanol (tons/yr)	Chromium (tons/yr)
EU-26																			
SV-10																			
Red Urethane	8.59	0.01670	7.900	19.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Primer	7.77	0.00310	7.900	7.00%	8.00%	0.00%	0.00%	17.00%	9.00%	4.00%	7.00%	0.06	0.07	0.00	0.00	0.14	0.08	0.03	0.06
Xylene	7.25	0.00437	7.900	86.60%	0.80%	0.00%	12.60%	0.00%	0.00%	0.00%	0.00%	0.95	0.01	0.00	0.14	0.00	0.00	0.00	0.00
Acid Thinner	7.11	0.00240	7.900	21.00%	0.00%	4.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.12	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Urethane Hardener	8.13	0.00120	7.900	34.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total State Potential Emissions												**2.07**	**0.075**	**0.024**	**0.138**	**0.142**	**0.075**	**0.033**	**0.058**

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lbs/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Secondary Metal Production
Aluminum and Brass Melting

Company Name: Elkhart Brass Mfg. Co., Inc.
Address City IN Zip: 1302 W. Beardsley Avenue, Elkhart, Indiana 46515
MSOP: 039-7635
Plt ID: 039-00072
Reviewer: CarrieAnn Ortolani
Date: December 13, 1996

SCC# 3-04-001-02
Smelting Furnace, Crucible

TYPE OF MATERIAL		Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Aluminum		5000	2000	2.5			
	PM *	**PM10 ***	**SOx**	**NOx**	**VOC**	**CO**	
	lbs/ton metal produced	**lbs/ton metal produced**	**lbs/ton metal produced**	**lbs/ton metal produced**	**lbs/ton metal produced**	**lbs/tons metal produced**	
	1.9	1.7	2.50	1.70	2.50	–	
Potential Emissions lbs/hr	4.75	4.25	6.25	4.25	6.25	–	
Potential Emissions lbs/day	114	102	150	102	150	–	
Potential Emissions tons/year	20.8	18.6	27.4	18.6	27.4	–	

* Note: Emission factor is from FIRE version 6.01.
Emission factors which are not denoted by a "*" are from older versions of FIRE and were not included in FIRE version 6.01 for various reasons.

SCC# 3-04-002-24
Smelting Furnace, Induction

TYPE OF MATERIAL		Throughput LBS/HR	1 TON/2000 lbs	TON/HR			
Brass		5000	2000	2.5			
	PM *	**PM10 ***	**SOx**	**NOx**	**VOC**	**CO**	
	lbs/ton metal produced	**lbs/ton metal produced**	**lbs/ton metal produced**	**lbs/ton metal produced**	**lbs/ton metal produced**	**lbs/tons metal produced**	
	2.91	2.91	0.50	0.00	0.00	–	
Potential Emissions lbs/hr	7.28	7.28	1.25	0.000	0.000	–	
Potential Emissions lbs/day	175	175	30.0	0.000	0.000	–	
Potential Emissions tons/year	31.9	31.9	5.48	0.000	0.000	–	

* Note: Emission factor is from stack test.

Aluminum Melting HAP Emissions

HAP	Content	EF (lb/ton melted)	Emissions (tons/yr)
Manganese	0.35%	0.007	0.073

Brass Melting HAP Emissions

HAP	Content	EF (lb/ton melted)	Emissions (tons/yr)
Nickel	0.80%	0.058	0.637
Lead	5.00%	0.10	1.10

Emission factor for Lead based on stack test
Emission factor for other HAPs = HAP content in metal * PM emission factor

Appendix A: Emission Calculations
Pouring, Cooling and Shakeout

Company Name: Elkhart Brass Mfg. Co., Inc.
Address City IN Zip: 1302 W. Beardsley Avenue, Elkhart, Indiana 46515
MSOP: 039-7635
Plt ID: 039-00072
Reviewer: CarrieAnn Ortolani
Date: December 13, 1996

Maximum Capacity	
2.5	tons of metal per hour
20.0	tons of sand per hour

Pollutant	Emission factor (lbs/ton of metal)	Emissions (lbs/hr)	Emissions (tons/yr)
PM	2.31	5.775	25.3
PM-10	2.31	5.775	25.3
SOx	0.02	0.050	0.219
NOx	0.01	0.025	0.110
VOC	1.34	3.35	14.7
CO	6.02	15.1	65.9
Lead	0.221	0.5525	2.42

Source of Emission Factors

No emission factors available for brass foundries
PM, PM-10 and Lead emission factors developed by stack testing at the existing Hunter Line in November 1993.
Stack test emission factors are the highest test results plus a safety factor of 2
VOC emission factors are from AP-42 emissions from gray iron foundries (SCC 3-04-003-20 and SCC 3-04-003-31)
NOx and SOx emission factors are from AP-42 emissions from gray iron foundries (SCC 3-04-003-20) and FIRE version 6.01.
CO emission factors are from Scott, W.D. et al 1978, Chemical Emissions from Foundry Molds,
Transactions of the American Foundrymen's Society, Vo. 86, pp. 203-208

Hazardous Air Pollutant Emissions

Maximum Capacity	
2.5	tons of metal per hour
20.0	tons of sand per hour

Green Sand Binder Emissions

Pollutant	Emission factor (lbs/ton of metal)	Emissions (lbs/hr)	Emissions (tons/yr)
Phenols	1.22E-03	0.003	0.013
Benzene	8.30E-03	0.021	0.091
Toluene	5.78E-03	0.014	0.063
m-Xylene	6.42E-04	0.002	0.007
o-Xylene	6.42E-04	0.002	0.007
Naphthalene	1.28E-03	0.003	0.014
Formaldehyde	3.90E-03	0.010	0.043
Acrolein	6.42E-04	0.002	0.007
Total		**0.056**	**0.245**

Alluminum and Brass Emissions

Pollutant	Worst Case Content (weight %)	PM Emission factor (lbs/ton of metal)	Emission factor* (lbs/ton of metal)	Emissions (lbs/hr)	Emissions (tons/yr)
Nickel	0.80%	2.31	1.85E-02	0.046	0.202
Manganese	0.35%	2.31	8.09E-03	0.020	0.089
Total				**0.066**	**0.291**

*Emission factor is overly conservative since PM emissions can be sand.

Pollutant	Emission factor (lbs/ton of metal)	Emissions (lbs/hr)	Emissions (tons/yr)
Lead	2.21E-01	**0.553**	**2.42**

	Emissions (lbs/hr)	Emissions (tons/yr)
Total HAP emissions:	**0.675**	**2.96**

Source of Emission Factors

Emission Factors for Green Sand Binders
Phenols, Toluene, m-Xylene, o-Xylene, Naphthalene, and Acrolein emission factors are from Scott, W.D. et al 1978, Chemical Emissions from Foundry Molds, Transacti
Benzene and Formaldehyde emission factors from Wisconsin Cast Metals Association

Lead emission factors developed by stack testing at the existing Hunter Line in November 1993.
Stack test emission factors are the highest test results plus a safety factor of 2
Metal emissions calculated based on aluminum and brass MSDS

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler

Company Name: **Elkhart Brass Mfg. Co., Inc.**
Address City IN Zip: **1302 W. Beardsley Avenue, Elkhart, Indiana 46515**
MSOP: **039-7635**
Plt ID: **039-00072**
Reviewer: **CarrieAnn Ortolani**
Date: **December 13, 1996**

Engine

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
3.26	28.56

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.027	0.109	0.009	1.428	0.079	1.199

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Heaters

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
8.93	78.23

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.074	0.297	0.023	3.911	0.215	3.286

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).
See page 10 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Company Name: **Elkhart Brass Mfg. Co., Inc.**
Address City IN Zip: **1302 W. Beardsley Avenue, Elkhart, Indiana 46515**
MSOP: **039-7635**
Plt ID: **039-00072**
Reviewer: **CarrieAnn Ortolani**
Date: **December 13, 1996**

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.121E-04	6.407E-05	4.004E-03	9.611E-02	1.815E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.670E-05	5.873E-05	7.475E-05	2.029E-05	1.121E-04

Methodology is the same as page 9.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Company Name: **Elkhart Brass Mfg. Co., Inc.**
Address City IN Zip: **1302 W. Beardsley Avenue, Elkhart, Indiana 46515**
MSOP: **039-7635**
Plt ID: **039-00072**
Reviewer: **CarrieAnn Ortolani**
Date: **December 13, 1996**

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.121E-04	6.407E-05	4.004E-03	9.611E-02	1.815E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.670E-05	5.873E-05	7.475E-05	2.029E-05	1.121E-04

Methodology is the same as page 9.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Welding and Thermal Cutting

Company Name: Elkhart Brass Mfg. Co., Inc.
Address City IN Zip: 1302 W. Beardsley Avenue, Elkhart, Indiana 46515
MSOP: 039-7635
Plt ID: 039-00072
Reviewer: CarrieAnn Ortolani
Date: December 13, 1996

Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS * (lb pollutant / lb electrode)				EMISSIONS (lb/hr)				TOTAL HAPS (lb/hr)
			PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
0	0		0.036				0.000	0.000	0.000	0.000	0.000
0	0		0.0241	0.00003		0.00001	0.000	0.000	0.000	0.000	0.000
2	0.01826484		0.0211				0.001	0.000	0.000	0.000	0.000
0	0		0.0055				0.000	0.000	0.000	0.000	0.000
2	0.01826484		0.0055				0.000	0.000	0.000	0.000	0.000

Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)				EMISSIONS (lbs/hr)				TOTAL HAPS (lb/hr)
			PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
1	1	0.00037	0.1622	0.0005	0.0001	0.0003	3.60E-06	1.11E-08	2.22E-09	6.66E-09	0.000
0	0	0	0.0815	0.0002		0.0002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.000
0	0	0					0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.000

				PM = PM10	Mn	Ni	Cr	Total HAPs
				9.75E-04	1.11E-08	2.22E-09	6.66E-09	2.00E-08
				2.34E-02	2.66E-07	5.33E-08	1.60E-07	4.80E-07
				4.27E-03	4.86E-08	9.72E-09	2.92E-08	8.75E-08

s for carbon steel unless a specific electrode type is noted in the Process column. Consult AP-42 or other reference for different electrode types.
ons)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)
ns)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)
/hr x 24 hrs/day
ır x 8,760 hrs/day x 1 ton/2,000 lbs.
from the American Welding Society study published in Sweden (March 1994).
ission factors are from an internal training session document.
onal emission factors for welding.

Appendix A: Emission Calculations
LPG-Propane -Commercial Boilers
(Heat input capacity: > .3 MMBtu/hr and < 10 MMBtu/hr)

Company Name: **Elkhart Brass Mfg. Co., Inc.**
Address City IN Zip: **1302 W. Beardsley Avenue, Elkhart, Indiana 46515**
MSOP: **039-7635**
Plt ID: **039-00072**
Reviewer: **CarrieAnn Ortolani**
Date: **December 13, 1996**

Potential Throughput kgals/year: 22.49

SO2 Emission factor = 0.10 x S
S = Sulfur Content = 0.50%

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	0.4	0.4	0.001 *(0.10S)*	14.0	0.5 **TOC value	1.9
Potential Emission in tons/yr	0.004	0.004	0.00001	0.157	0.006	0.021

*PM emission factor is filterable PM only. PM10 emission factor is assumed to be the same as PM based on a footnote in Table 1.5-1, therefore PM10 is filterable only as well.
**The VOC value given is TOC. The methane emission factor is 0.2 lb/kgal.

Methodology

1 gallon of LPG has a heating value of 94,000 Btu
1 gallon of propane has a heating value of 91,500 Btu (use this to convert emission factors to an energy basis for propane)
(Source - AP-42 (Supplement B 10/96) page 1.5-1)
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.0915 MMBtu

Emission Factors are from AP42 (Supplement B 10/96), Table 1.5-1 (SCC #1-02-010-02)

Emission (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal) / 2,000 lb/ton
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).